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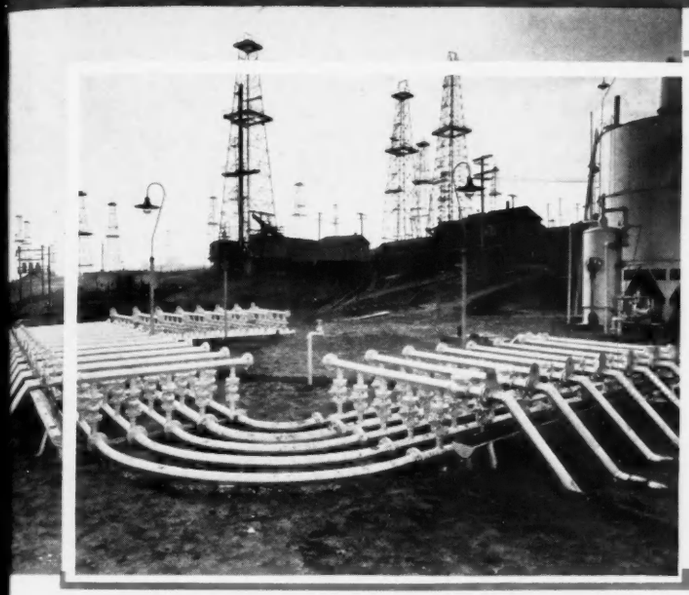
The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN

THE WEEK'S NEWS INTERPRETED



Only
NORDSTROM VALVES *meet every major valve need*

Do ALL the Valves You Operate Meet These Requirements?

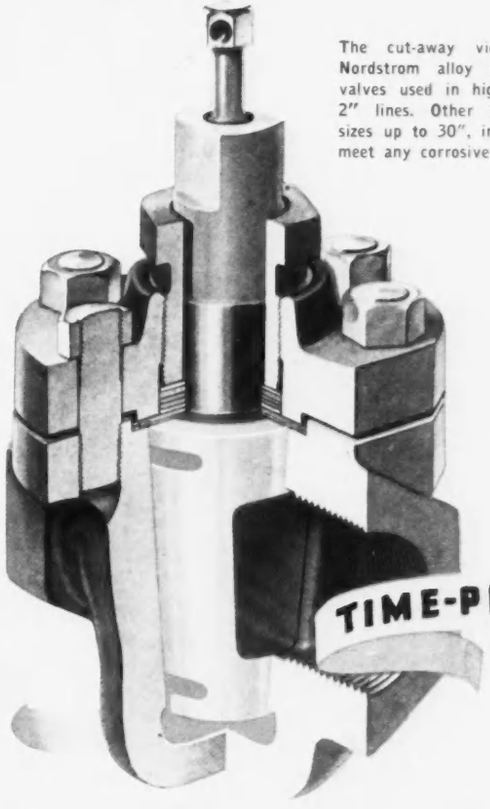
Leak-Resistant?
Nordstroms are constantly sealed at the ports with lubricant under pressure, preventing leakage internally and externally.

Easy-turning?
Nordstroms have one moving part, the plug, completely surrounded by a film of lubricant. Non-sticking.

Quick-operating?
A quarter-turn completely opens or closes a Nordstrom, saving time at every turn.

Corrosion-resistant?
A wide variety of alloys is available in Nordstrom Valves to meet every condition of corrosion.

Compact?
Nordstroms are easiest to install, require no over-hanging stems or awkward yokes.



The cut-away view shows Nordstrom alloy steel plug valves used in high-pressure 2" lines. Other types and sizes up to 30", in alloys to meet any corrosive condition.

WORLD-WIDE ACCEPTANCE

TIME-PROVEN

MERCO NORDSTROM VALVE CO. a Subsidiary of **PITTSBURGH EQUITABLE METER CO.**

Main Offices: Pittsburgh, Pa. Branch Offices: New York City, Buffalo, Philadelphia, Columbia, Memphis, Atlanta, Chicago, Kansas City, Tulsa, Houston, Los Angeles, Oakland

VOLUME 82 AUGUST 3, 1936 NUMBER 8

"SELECTIVE

JUST LIKE MY RADIO"

—Says Charley Dougharty

Charley Dougharty of California is one of Lane-Wells' most experienced "Shooters." He explains below why pressing the firing switch in his cab reminds him of turning his radio dial at home.

"I often think," says Charley, "when I'm at the controls in my Gun Perforator Truck, of the similarity between the method of 'Selective Production'—which our customers are using every day now by isolating each oil sand and Gun-Perforating—and the way I tune my radio at home, cutting out what I don't like and selecting the program that entertains me the most... And when it comes to 'sharpness,' our Gun Perforator system sure has that, too, when we can pick out and perforate narrow strata only a couple of feet wide, if necessary."

Devices and method of operation licensed by Technicraft Engineering Corp. under Patents No.— 1,582,184; 2,029,454; 2,029,478; 2,029,490; 2,029,491; 2,033,562; 2,043,340; 2,043,341; 2,043,400; 2,043,401.

Tomorrow's Tools Today!

THE LANE-WELLS CO.

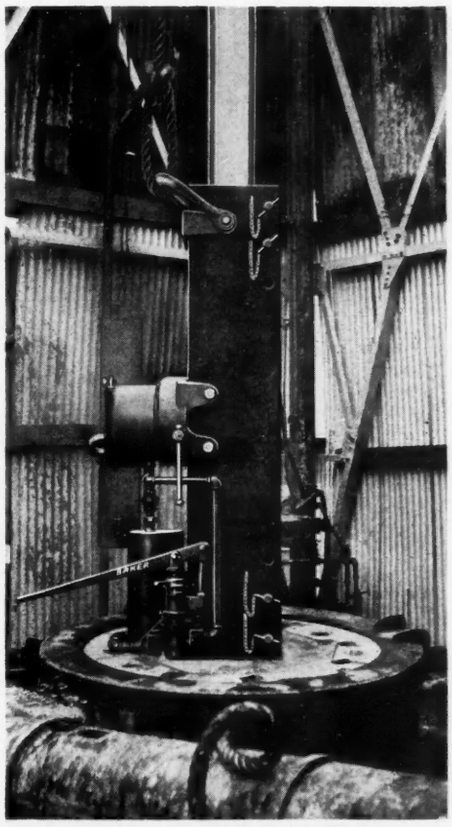
Gun Perforator Service

LOS ANGELES, CALIFORNIA ○ NEW YORK CITY, NEW YORK

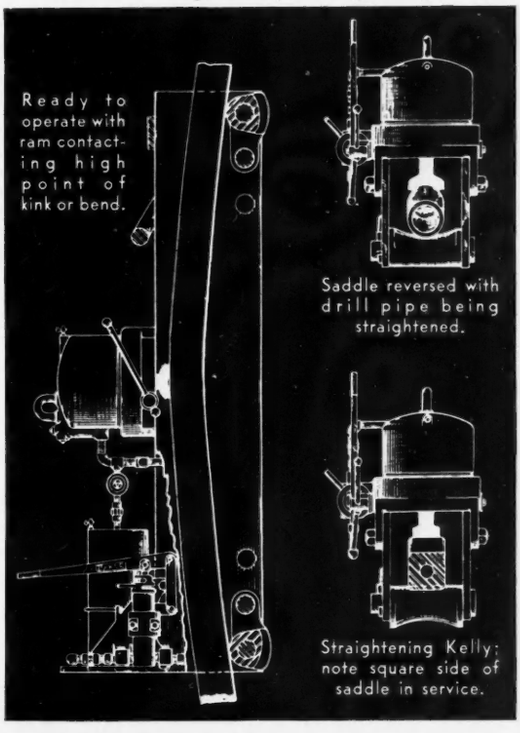
THE LANE-WELLS CO. OF TEXAS • HOUSTON & CORPUS CHRISTI ○ THE LANE-WELLS CO. OF OKLAHOMA • OKLAHOMA CITY & TULSA

The OIL WEEKLY, Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $2.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

"We figure it has paid for itself, already!"



On rotary table with Kelly in position for straightening


Ready to operate with ram contacting high point of kink or bend.
Saddle reversed with drill pipe being straightened.
Straightening Kelly; note square side of saddle in service.

A prominent drilling contractor made this voluntary statement about his Baker Kelly Straightener:

"We have straightened 297 joints of drill pipe with it within the last month, and and figure it has paid for itself already."

WHAT IS THIS NEW STRAIGHTENER?

It is a completely portable outfit which is readily transported to the well on a small truck or trailer, and is easily set up for operation by the catline on the rotary table.

The principle of the hydraulic ram is utilized, and the force built up by a hand operated pump is applied to the bend in the Kelly or drill pipe **as it hangs suspended in the derrick.**

HOW DOES IT OPERATE?

As shown in illustration above, the Straightener is picked up with the catline and placed in a vertical position on the rotary table with Kelly bushing removed. Spacer saddles at top and bottom are then removed and the Straightener placed around the Kelly so that the ram contacts the high point of the kink or bend. The spacer saddles are then replaced and by operating the hand pump hydraulic pressure of 78 tons is quickly built up and the bend or kink is removed.

What it means to YOU to straighten drill pipe and Kellys at the well.

Even when the shop is close at hand, there is always considerable expense involved and time lost in removing "grief stems" (Kellys) or drill pipe from the well, taking them to the shop and returning them to the job.

Straightening of this kind is a still more serious problem in wildcat wells, or in foreign fields, and long shut-downs are frequent occurrences.

Compare your present methods with the work done by this efficient device which straightens drill pipe or Kellys **while suspended in the derrick.** You secure all the savings of time and expense mentioned above, and also avoid the danger of further kinking or bending the Kelly or drill pipe while laying it down, hauling to and from the shop, and dragging it into the rig.

Write to us direct for information and prices, or look on pages 209 and 210 of the 1936 Composite Catalog.

COMPLETELY PORTABLE

KELLY REMAINS SUSPENDED IN DERRICK

NO LOST TIME

NO DANGER OF ADDITIONAL KINKS

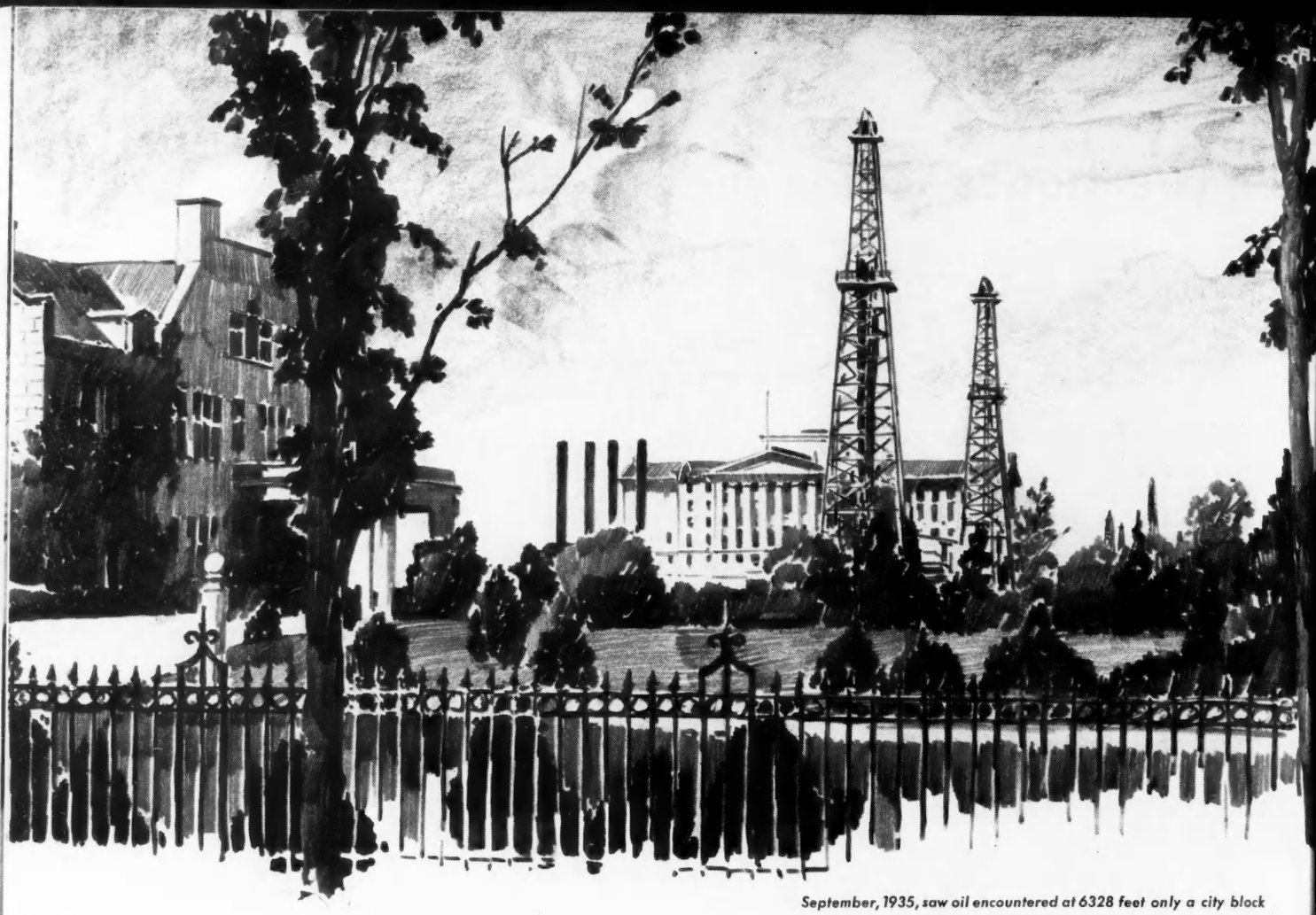
FOR DRILL PIPE OR KELLY

BAKER OIL TOOLS, INC.

POST OFFICE BOX 609, HUNTINGTON PARK CALIFORNIA

COALINGA • TAFT • HOUSTON • OKLAHOMA CITY • TULSA • NEW YORK

BAKER PORTABLE KELLY AND PIPE STRAIGHTENER



September, 1935, saw oil encountered at 6328 feet only a city block from the Governor's Mansion in Oklahoma City. This was the Mary Green Number One which was followed by a drilling boom that gave Oklahoma City the Mansion Pool within its own corporate limits. Above is the Mansion of the Governor of Oklahoma and Oklahoma's State Capitol, showing oil wells on state property.

The Mansion Pool in the corporate limits of Oklahoma City characterizes the vigorous enterprise of the oil industry in its quest for greater production. This same enterprise has led oil producers to take full advantage of Dowell *Inhibited* Acid treatments. Today the importance of Dowell and its broad service is an accepted fact.

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OIL AND GAS WELL CHEMICAL SERVICE

THE OIL WEEKLY

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Advertising rates on application.

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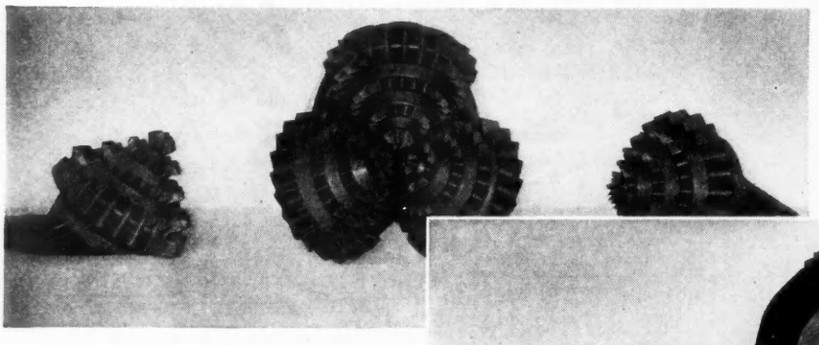
● *"Full-hole" tool joints of Nickel Alloy Steel forgings, oil quenched and tempered to a high Brinell hardness by Chicago Pneumatic Tool Co.*

...they're made of NICKEL ALLOY STEEL

AS ARE THE BITS AND REAMERS SHOWN BELOW



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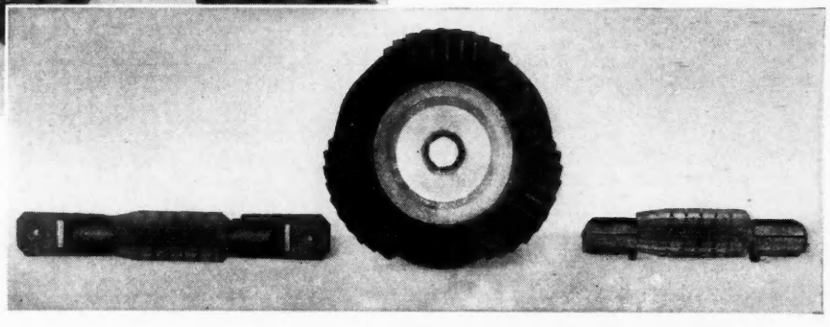

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THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.

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AND PIPE LINE MEN

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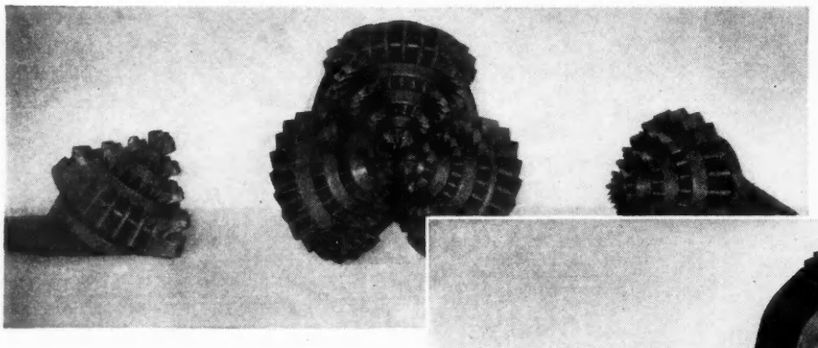

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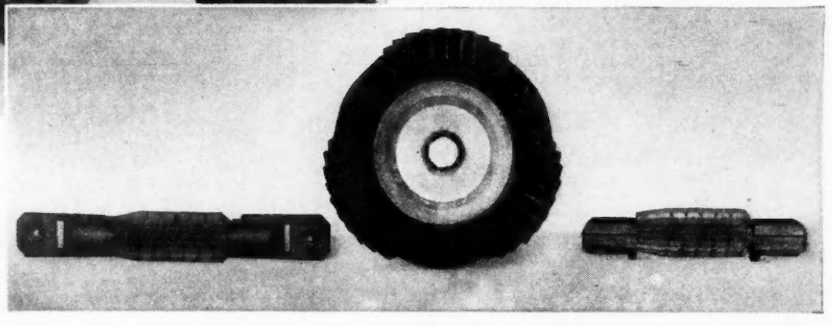

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Pact Meeting

EFFORT INITIATED TO EXTEND INTERSTATE COMPACT PLAN

DALLAS.

AFTER initiating efforts to extend its existence beyond September of 1937 and hearing committee reports, the Interstate Oil Compact Commission closed session at noon July 31 to meet in Oklahoma City the first Friday in October.

It was a routine session with the Texas Centennial as its background. In the afternoon commission members and visitors were guests of the centennial here and in the evening they went to Fort Worth for the frontier show as guests of Charles F. Roeser, president of the Independent Petroleum Association of America.

Unless legislation is passed by Congress the commission will cease to have legal standing in September 1937. Colonel E. O. Thompson, representing Texas, offered a resolution to the effect that a committee be named to study procedure in gaining favorable legislation. He was named its chairman with Homer Hoch, chairman of the Kansas Corporation, and William Bell, representing Illinois as other members.

The outstanding committee report was that from the committee on conservation, headed by Homer Hoch. He presented the work of a sub-committee, which is seeking to codify proration laws and orders of the oil producing states. The finished report was restricted to Oklahoma.

The sub-committee is composed of Marvin Lee, technical advisor to the Kansas Corporation Commission; C. C. Brown, a member of the Oklahoma Tax Commission; and Dr. E. H. Wells, state geologist of New Mexico. Its conclusion was:

"Your sub-committee has learned much about the inadequacy of petroleum conservation laws and believes it can make some suggestions worth consideration in future legislation, provided such suggestions would be a proper part of our next report.

"We regard certain laws that permit regulatory agencies to take action as and when they see fit as to be ineffective. Proper conservation should be made mandatory."

Colonel Thompson offered the report of the coordinating committee, which dealt largely with the enforcement of proration in East Texas, where both the state and federal representatives have worked.

Dr. E. N. Wells, representing New Mexico, gave the report of the committee on consumption. Success in getting the federal government to continue its forecasts of consumption and to undertake a study of oil in storage as to amount, age and value, made up his report.

The harmonious brief session was conspicuous by absence of faces and expected action. E. W. Marland, Oklahoma governor and commission chairman, could not attend. He but recently went through two primary elections and came out not elected to the United States Senate. There was no one from Louisiana even as an unofficial observer and there was no message from any Louisiana official.

Neither was action taken nor consideration given to recent decisions of regulatory bodies in Texas, Oklahoma and Kansas to raise crude oil allowables for August. The commission was active in June when the first orders were written by which allowables were set below figures represented as proper by the United States Bureau of Mines.

In the absence of Governor Marland, Tom Anglin, his representative, presided. Colonel Thompson welcomed the commission to Texas which he classed as a state where conservation is really being practiced.

"The Interstate Compact," he said, "is a legal method of carrying out conservation. It is organized by free sovereign states, which are at liberty to solve their own affairs and also free to confer with other oil producing states. No one has challenged its constitutionality; no one has challenged its methods."

"It is not a plan to reduce the production of oil in order to make its price high. It is concerned strictly with conservation of a natural resource in the interest of the Public."

After offering the report of the conservation committee, Homer Hoch of Kansas, also dealt with the proper function of the commission.

"It would be a serious thing," he explained, "if we forgot that we are not here to help the industry, however desirable that may be. The work of this commission must remain that of seeking methods of conserving oil."

Commission members present were Tom Anglin, representing the governor of Oklahoma; Homer Hoch, chairman of the Kansas Corporation Commission; E. O. Thompson, chairman of the Texas Railroad Commission; Dr. E. H. Wells, representing Hiram M. Dow of New Mexico; William Bell of Illinois. Colorado, the sixth compacting state, was not represented.

Representatives of non-compacting states sat with the commission. J. R. Pemberton, California proration umpire, said he was not at liberty to speak for the governor but that the industry in California looked favorable upon the compact. He expressed the hope that California would become a member.

Wendel Stephens of Ohio, Henry Hunt of Michigan and Walter A. Jones each spoke favorably of the compact and gave it credit for assistance in reviving the petroleum industry in those states. R. D. Wallace of Kentucky said he felt certain his state would become a member if the aims and activities of the commission were properly presented to the legislature and to executives of Kentucky.

PENSION CENSUS

November set for social security count

WASHINGTON, D. C.

EMPLOYEES in all branches of the oil industry—production, refining and distribution—will be included in a national census of workers which the Social Security Board plans to undertake late in November to lay the groundwork for application of the social security act passed at the last session of Congress.

The survey will cover some 30,000,000 persons working for wages or salaries, each of whom will be given a number which in the future will designate him in the federal employment records.

The collection of data is planned by the board in anticipation of the inauguration in 1942 of the payment of old-age pensions to persons more than 65 years of age, to finance which the board expects, at the close of that year, to have a reserve of $60,000,000,000 accumulated from the payroll taxes which will be initially imposed next year.

INVESTIGATE RACKET

Of selling unowned share in public oil lands

WASHINGTON, D. C.

ASSISTANCE of the public in eliminating a racket which has sprung up in connection with obtaining of prospecting permits and leases for oil and gas on the public lands was asked by Secretary of the Interior Harold L. Ickes, July 29.

Post office inspectors and investigators of the department, the Secretary revealed, are engaged in investigations in California, Illinois and Idaho of persons or associations representing themselves as agents of the government and soliciting the purchase of acreage interests in applications for permits and leases.

"No person or association of persons has been appointed or authorized by the Department of the Interior, or by any other office or bureau of the Federal Government to act in this capacity, and those who do are operating a fraudulent scheme to fleece innocent investors," Ickes declared.

"Despite several warnings released to the public against this type of scheme, the General Land Office has received many letters from persons residing in various sections of the country advising that they have been solicited by agents of so-called associations who represent that for a fee of 25 cents or more per acre their associations will file for them an application for lease of valuable oil and gas lands yielding enormous profits.

"The claims of such agents are completely false and any persons making them are liable to criminal prosecution. Investigations of promoters of such schemes are now being conducted by the division of investigations in conjunction with inspectors of the Post Office Department in the states of California, Illinois and Idaho.

"The fraudulent nature of these schemes," the Secretary said, "is apparent to anyone acquainted with the Federal oil and gas leasing laws. Under the law, oil and gas prospecting leases are issued by the Secretary of the Interior, upon proper application, for lands not known to be valuable for oil or gas, and available statistics show that the percentage of commercial discoveries on such lands is small. Leases of public lands known to be valuable for oil or gas are sold to the highest bidder."

Texas Allowable

FOR AUGUST IS NEAR THE BUREAU OF MINES TOTAL

AUSTIN.

WITH a slightly larger consumer demand, comparatively little change was made in the allowables of Texas oil fields in the August proration schedules issued by the Texas Railroad Commission.

The new order, effective August 1, fixed the state top allowable at 1,157,941 barrels, which is somewhat more than in the last order, dated June 21, and somewhat less than the current allowable (July 27) which took into consideration accretions in the various fields in which there are no top allowables.

The consumer demand figure certified to Texas by the Bureau of Mines was 1,154,700 barrels, making the Texas allowable apparently 3241 barrels in excess of consumer demand. However, Chairman Ernest O. Thompson pointed out that through 1936 production has run 2.17 percent below the allowable. Figuring in this factor, the actual allowable would be 1,132,814 barrels, well under consumer demand and giving a fairly large margin for accretions.

Perhaps the best way to get a perspective of the changes made by the commission is to compare district totals for June 21, date of the last previous order; July 27, the current allowable, and August 1, as follows:

District	June 21	July 27	Aug. 1
East Texas	425,000	432,796	434,000
East Central	52,116	50,550	49,851
Rodessa	4,675	6,875	6,875
Southwest Texas	148,115	161,131	159,223
Gulf Coast	175,769	183,517	178,267
West Central	53,294	55,137	54,393
West Texas	150,179	159,400	153,562
*North Texas	59,880	62,183	59,880
†Panhandle	60,990	62,302	60,990

*Includes Foard County.
†Includes Wheeler and Osborne areas.

The decreases noted between July 27 and August 1, were achieved by slicing off a little here and a little there and not very much anywhere. East Texas was left unchanged at 2.32 percent. The increases were almost wholly due to well completions.

These fields were listed for the first time with initial allowances as follows: Estes in West Texas, 135 barrels; Green's Lake and Hawkinsville in the Gulf Coast with 135 barrels each; Voss in division 2 of Southwest Texas with 125 barrels; Flour Bluff in Nueces County with 135 barrels; and Peters, in Division 4 of Southwest Texas with 375 barrels.

Nueces County was the greatest beneficiary of the new schedules. The largest single increase went to Corpus Christi where the allowable crept up from 5000 barrels to 8000 barrels. In the Saxet Frio area, the June 21 allowable was 875 barrels, the August 1 allowable 3750 barrels, an increase of 2875 barrels.

SMITH SIGNS

RAILROAD Commissioner Lon A. Smith, who asked at the last hearing that the East Texas potential factor be placed at 3 percent, said orders were made up prior to hearings, and challenged the integrity of the Commission's East Texas engineers, signed the new state-wide proration order which left East Texas unchanged at 2.32 percent.

Smith explained that he had said he would sign no order cutting back East Texas. The impression had been general that he had promised to refuse to sign all such orders.

"I have kept faith with the people," said Smith.

TEXAS GAS ORDER

Allowables to be checked against production

AUSTIN.

A NEW method of fixing per well allowables, under which allowables will be checked against actual production and "charge-offs" made, was put into effect by the Texas Railroad Commission in the August gas proration order.

That this method would be used was forecast in the commission's order of June 25, in which appeared this statement:

"It is further ordered, that the reasonable lawful market demand for the East Sweet and West Sweet Panhandle fields shall be determined by nominations for the purchase or use of sweet gas . . . which shall, effective August 1, be adjusted to the actual production of gas from these reservoirs as determined from the records of the railroad commission. Accumulating individual gas well allowables shall be adjusted and reflected in the schedules to be issued each month."

Allowables were off about 53,000,000 cubic feet from July, due largely to the decline in demand for sour gas, the slack having been absorbed by a greater use of casinghead gas. Actually, the demand for sweet gas was up in both the east and west Panhandle areas.

A slightly different nominating form also was promulgated, under which monthly totals of nominations will be required.

July and August allowables are compared in the following table:

	July	August
East Panhandle	113,564,000	114,860,000
West Panhandle	514,048,000	519,983,000
Sour Panhandle	540,000,000	486,567,000
Outside Panhandle, Sweet	290,323,000	282,141,000
Outside Panhandle, Sour	20,598,000	22,206,000
	1,478,533,000	1,425,757,000

Raise Allowable

OKLAHOMA OUTPUT SET AT 575,500 BARRELS DAILY

OKLAHOMA CITY.

OKLAHOMA oil producers have an allowable of 575,500 barrels of crude oil for each day of August by order of the State Corporation Commission. This figure represents the amount of crude oil which the United States Bureau of Mines calculated to be adequate for the month.

This action of taking the full quota recommended by the federal agency follows two months in which the state regulatory body wrote orders well under the federal recommendation. In doing this the state commission made unnecessary the hearings which were on its docket to seek higher allowables in some areas.

Although orders were for lower figures, actual production in Oklahoma during June and July held around 550,000 barrels daily. If production now moves up to the level of the order, the output for the state will be raised around 25,000 barrels daily.

Increases were authorized for 27 pools while decreases were set for three. Other areas remained unchanged.

Major increases came in the flush and semi-flush fields. Output of the Oklahoma City field was raised 20,000 barrels daily, with 14,000 to come from Wilcox sand wells and 6000 barrels from the Simpson zone. The increase for the Fitts pool was 11,271 barrels, of which the upper Simpson sand will furnish 9071 barrels and the Hunton lime wells 2200 barrels. The Crescent pool, where wells are being deepened to the second Wilcox sand, was granted an increase of 3000 barrels daily.

By divisions according to proration schedules the changes for the state were:

	July	August
Class A	107,962	121,962
Class B	120,228	132,278
Class C	97,019	117,458
Class D	19,200	19,900
Unclassified	25,613	26,613
Unprorated areas	156,153	157,289

The increase in Class B pools, most of which are in the Greater Seminole area, will allow these fields to go on an unprorated basis for the month. Previous orders have placed but slight restriction upon these fields. The 6000 barrels increase for the Simpson zone at Oklahoma City in effect places this sand in the unclassified section since operators have agreed upon a special proration program for August.

Texas Election

OIL INDUSTRY INTERESTED DUE TO SEVERAL RESULTS

AUSTIN.

OIL men interested in the industry's future, as well as in immediate profits, are studying with care several unusual angles to the Texas primary election.

The fact of first importance which they point out is that the next session of the Legislature—that is, the next regular session—may be more tractable than the last in so far as the Governor's recommendations are concerned.

Taxes Prominent Factor

James V. Allred's first primary victory was so surprisingly great that it will impress the legislative mind. It may be put down now, as a foregone conclusion, that Texas will have no sales tax. Granted the possibility that the Legislature might have passed a sales tax at the last session, and the Governor might have signed it had it exempted necessities of life, that possibility is now past. The voters of the state spoke too strongly when they defeated Roy Sanderford, who ran on a straight sales tax ticket.

If no sales tax, what?

Not an income tax, for Tom Hunter proposed such a tax in a modified form. The needle swings around unerringly to the tax program suggested by Governor Allred in his campaign and in his tax messages to the last legislature.

During the Legislature, Allred suggested a tax on pipe lines; certain changes in the charter laws so that pipe lines no longer would be exempt from one class of capital stock tax; a natural gas tax. He did not propose, then, an oil tax. But in the campaign he did propose a "reasonable" increase in the gross production tax.

With this situation fully developed, observers of the legislative scene become more than usually interested in the legislative scene.

The Senate makeup, at this time, is almost complete, with only few races to be decided by a run-off campaign.

The apparent and logical conclusion from this lineup and that of the House is that there is going to be a greatly changed legislature next year. Moreover, numerous members ran on the platform of paying everybody pensions. It is anticipated that their ardor will be cooled when they are convinced that the Federal government will match only payments made on the basis of need, but for corporations which have, or are believed to have money, it looks like troubled waters ahead.

TALCO REGULATIONS

Another delay in orders for spacing looming

AUSTIN.

REOPENING of the Talco spacing rule squabble, and a consequent delay of from 30 to 60 days in establishing field rules for that field, was threatened as Senator Tom Deberry of Bogata circulated operators with a petition asking the delay.

DeBerry said his petition, which places independent operators on record as favoring a two-acre spacing rule, would not be presented until he had completed a canvass of independent operators and royalty owners in the field.

The petition challenges evidence presented at the last Talco hearing; asks the railroad commission to make its own independent investigation; denies that independents favor a 10-acre rule as press dispatches on the data of the hearing at Paris indicated.

POWER CONFERENCE

Papers dealing with oil are part of program

WASHINGTON, D. C.

PAPERS dealing with petroleum have been received so far by the World Power Conference from eminent authorities in more than a dozen countries.

Oil and the oil industry will be featured both in the writings and the discussions of the conference. The conference will meet in Washington, September 7-12, with an estimated 3000 representatives of 48 nations attending for a discussion of "The National Power Economy."

Three of the 18 subjects submitted for consideration on the program deal directly with petroleum. Approximately 30 papers have been received thus far on the oil topic.

The topics on oil are: Paper No. 1, "Development and Utilization of Power Resources"; No. 5, "Organization of the Production, Refining, and Distribution of Petroleum and Petroleum Products"; and No. 12, "Conservation of Petroleum and Natural Gas."

Paper No. 1 on the "Development and Utilization of Resources" will be in the form of a world inventory, presenting statistics on the use and extent of power resources, including petroleum. One important feature of this paper is the use of a standardized form which has been developed by the World Power Conference for the compilation of the material.

Paper No. 5 will deal with the history and status of petroleum production and refining, with the organization of the industry, with data on oil conservation and production, refining, transportation, distribution, and consumption, with ownership status, prices, relations with consumer and government, with imports and exports, and with plans for stabilization of the industry.

Paper No. 12 will review the facts respecting conservation of oil and gas, the extent to which conservation is necessary, the extent of waste, methods of refining, and plans for conservation.

Papers for the United States are being prepared by: Myron S. Watkins, New York University; E. L. deGoyler, president, Felmont Corporation, Houston, Texas; J. Noel Robinson, vice president, Tide Water Oil Company of New York; R. E. Hardwicke, attorney, Fort Worth, Texas; Joseph E. Pogue, consulting engineer; and the U. S. Bureau of Mines.

Many Foreign Papers

Papers on the subjects dealing with oil have been received from these countries and authors: Argentina — Adolfo Niebuhr, president, Argentine Committee; and Guillermo Hileman and Pasoual Sgrosso, engineers; Austria — Federal Ministry for Commerce and Traffic; Canada — Canadian National Committee and P. V. Rosewarne, Department of Mines, Ottawa; China—National Geological Survey of China, and the Electric Utility Regulation Board; France—Jules Meny, Administrateur delegue de la Compagnie Francaise des Petroles, and Etienne Genissieu, chief engineer, Roads and Bridges; Germany—Professor Dr. A. Bentz assisted by Dr. Kast, director H. Brochhaus and Fachgruppe Mineralole and Mineralolprodukte, and Dr. W. Leisse, assisted by Dr. Ing. G. Balzer; Great Britain—Sir John Cadman, G. C. M. G., chairman, Anglo-Iranian Oil Company, Frederick Brown, London School of Economics and Political Science, the Petroleum Department, the Mines Department, the British National Com. of the World Power Conference; Czechoslovakia — Dr. Ing. J. Tichy, Central Electric Utility, and Dr. Ing. F. Kneidl, counsellor, Ministry of Public Works; Holland — Professor Dr. Ir. F. K. Th. van Iterson, director, State Mines; Hungary—Sz. Hankiss, chemical engineer, P. Kuzaila, mechanical engineer, and B. Speidl, chemical engineer; Japan—H. Kikuchi, Department of Communications; Norway—Norwegian National Committee; Poland—Polish Nat'l. Committee, Dr. Stanislaw Schaetzel; Russia —B. E. Weitz, professor.

The Third World Power Conference will engage the attention of the engineers, scientists, and economists of the world. The First World Power Conference was held in London, 1924; the second in Berline, 1930.

50 Nations Participating

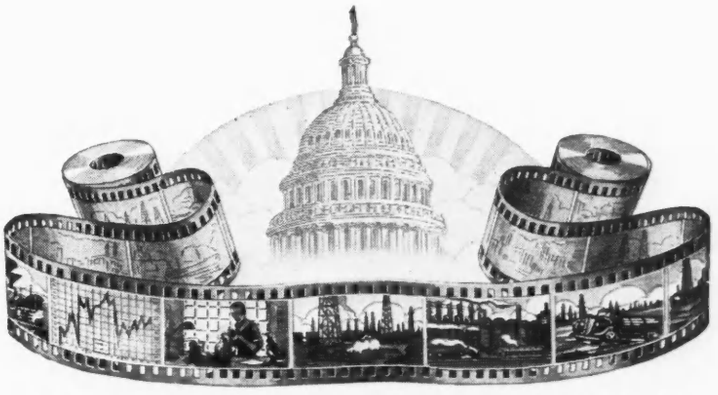
The sessions of the Washington meeting will be specifically devoted to a study of "The National Power Economy." This includes a consideration of all the broad economic issues involved in the production and use of power resources—coal, oil, gas, water power—from the standpoint of nearly fifty participating nations.

The Third World Power Conference will be conducted as an international forum, where all sides of the questions growing up around public and private power policies can be presented to the entire world, on a basis of free and frank discussion, without personalities, politics, or propaganda.

It is hoped, after all sides have been heard and after the experience of all the leading nations of the world have been compared, that some common ground may be found for the development and use of electrical power.

The World Power Conference is sponsored and financed jointly by the United States Government and by the electrical industry of the United States.

The Changing Panorama



THE OIL WEEKLY'S COMPOSITE VIEW OF INDUSTRY

Edited by L. J. LOGAN, Associate Editor

ALTHOUGH the oil industry did a good job of adding to crude reserves in the first half of 1936, as brought out in this column last week, it is not resting on its honors. The search for new oil probably is keener now than at the beginning of the year.

Companies Are Active

The oil companies individually are realizing the need for continually adding to their future supplies to replace the oil they are taking from their producing leases. Consequently, they are stepping out to line up more reserves. They are figuring on having to make comparatively heavy expenditures during the latter half of the year in drilling and equipping additional wells and in acquiring additional leases.

Petroleum consumption is running higher this year than ever before in all history. From the wells in the United States the oil companies this year will take considerably more than a billion barrels of oil.

This means that individual companies at the end of the year will find their underground supplies substantially reduced, unless they will have developed or acquired replacement reserves in the meantime.

As stated last week, the industry as a whole found more new oil than the half billion barrels it took from the ground in the first half of 1936. But the results naturally varied among the different companies, and those that did not sufficiently add to their future requirements may be expected to be particularly aggressive the latter half of the year in exploration, drilling, and buying of proved properties.

Rodessa Affects Drilling Plans

Recent developments at Rodessa field have tended to stimulate field work in other districts. Much talk is going around to the effect that the reservoir pressure on the Louisiana side of the field is slipping dangerously fast, and that pressures on almost virgin leases on the Texas side have dropped alarmingly. Too much gas is being popped off, it is asserted.

It is possible, of course, that some propaganda may be embodied in these reports about Rodessa, with the object of promoting stricter control of the field.

Nevertheless, this new picture of Rodessa is quite different from that of a year ago—or of six months ago. The industry recognizes that much danger still lurks in the big pool that embraces parts of two states. But the field is not considered the great menace to the industry's stability that it formerly was.

This altered outlook at Rodessa is causing greater confidence generally and is resulting in increased field activity in other areas.

Among the districts that are becoming increasingly active, presumably due in part to the changed Rodessa situation, is West Texas. The boosters of that district assert that it offers more bargain opportunities than any other section of the Southwest. Other districts also have their sponsors. In the first half of 1936, United States drilling ran 20 percent ahead of the similar period of 1935, and nearly all districts of the country showed increases.

Thirteen Billion Barrels in Sight

The country's present reserves of recoverable crude oil are around 13,000,000,000 barrels. In recent years the industry has been taking from the ground about 1,000,000,000 barrels annually. Thus the present reserves are the equivalent of about 13 years' requirements, at the current rate of consumption. Of course, the 13 billion barrels of known reserves could not be produced practically within 13 years. Some of them will not be recovered, perhaps, until 25 years or longer from now.

However, it is being demonstrated that a 13 billion-barrel reserve of the kind now held—embracing some flush fields—is entirely adequate for meeting consumer requirements of the present proportions. In fact, there would be no difficulty at present in meeting requirements even if a lower percentage of the reserves were in the flush stage.

It is indicated, consequently, that there will not be any danger of an oil scarcity so long as the industry can maintain the known reserves around the present proportions. There will not be any danger of shortage, in other words, if the industry can consistently find about a billion barrels of new oil each

year to compensate for the similar quantity being consumed annually.

The American Petroleum Institute's committee of geologists and engineers estimated the nation's known reserves as of January 1, 1935, at 12,177,000,000 barrels. During 1935 discoveries aggregated 1,810,000,000 barrels, according to a survey by THE OIL WEEKLY, while the year's production totaled 993,942,000 barrels, leaving a net addition to reserves of 816,058,000 barrels. That addition brought the nation's total reserves as of January 1, 1936, to 12,993,058,000 barrels. In the initial half of 1936 the industry discovered somewhat more new oil than the 525,000,000 barrels that it took from the ground within the six months' period. Consequently, the total commercial reserves as of July 1, 1936, were indicated to be at least 13,000,000,000 barrels, or a little more than at the beginning of the year.

Texas and California at Top

Of the 13,000,000,000 barrels of crude available for recovery, 50 percent lies within Texas and 24 percent in California. The remaining 26 percent is scattered among all the other oil producing states, with Oklahoma following first behind California.

The Texas reserves at present aggregate about 6,500,000,000 barrels. They are about 300,000,000 barrels higher now than at the beginning of the year, discoveries in the first six months having totaled about 500,000,000 barrels, while production of the state was about 200,000,000 barrels. (The Texas discoveries alone compensated for the half-billion barrels taken from all United States wells in the first half of the year.)

East Texas Is Big Reserve

Of the 6,500,000,000 barrels of Texas reserves, about 2,500,000,000 barrels, or nearly 40 percent, represents oil yet to be given up by the marvelous East Texas field, despite the fact it already has produced nearly a billion barrels. (Bureau of Mines figures through May, 1936, and American Petroleum Institute figures for June and July, 1936, indicate that the East Texas field has produced approximately 891,000,000 barrels.)

Soon after that big field was delimited, its ultimate recovery was generally estimated somewhat above 2 billion barrels. But subsequently the estimates have been pushed upward because of various factors, until the ultimate recovery has been placed by some of the experts between 3 and 3½ billion barrels. The average oil sand thickness has proved greater than originally believed. The productive area has been extended substantially. Effective regulation of production has promoted a high percentage of recovery of the oil within the reservoir.

In the less than six years since it was discovered, the East Texas field already has produced more oil than any other field in the United States. In actual production it has forged ahead of such remarkable fields as Midway-Sunset, Coalinga, Kern River, Long Beach, Santa Fe Springs, and others, some of which have been producing more than 35 years. Yet East Texas still has before it as much output as the combined past production of all those mentioned five unusual fields of California. Before East Texas there was only one "billion barrel" oil field: an oil field expected to yield ultimately a billion barrels. It was Kettleman Hills, California. Now East Texas almost has produced its first billion, and still has 2½ billions to go. When it is described as a gigantic field, the description is conservative.

Next to East Texas, the Gulf Coast district of Texas is the most important in the state in crude reserves, the total there being estimated around 1¾ billions. Then follows West Texas with somewhat less than 1 billion. Eastern Texas outside the East Texas field and Southwest Texas have around ½ billion barrels of reserves each, while the Texas Panhandle has about ¼ billion. North Texas and West Central Texas together have reserves estimated somewhat under ¼ billion barrels, consisting mostly of old, settled fields.

California Reserves Extensive

California in the past has produced more crude oil than any other state, although it is closely crowded first by Texas and then by Oklahoma. The California output of the past has aggregated nearly 4½ billion barrels. But the state still has more than 3 billion barrels of known reserves yet to be produced.

A very comprehensive report on California reserves has just been issued at the office of J. R. Pemberton, Oil Umpire for the Central Committee of California Oil Producers, at Los Angeles. The report shows the status of California reserves as of January 1, 1936. Consequently, it does not embrace the three new important fields discovered in the state during the first six months of this year.

The report indicates that California's total remaining oil reserves as of January 1, 1936, aggregated 3,117,705,000 barrels. From January 1 to July 1, California drew upon its reserves to the extent of 108,160,769 barrels. But in the meantime the three new fields were found, and they quite likely more than compensated for that 100 million barrels of production from the older fields. Consequently, the 3,117,705,000-barrel total apparently would be a conservative estimate of remaining reserves at present.

Kettleman Is Billion Barrel Field

Of the total California reserves, a little over 25 percent lie in the Kettleman Hills field. That field is credited in the report with remaining reserves of 845,400,000 barrels. That quantity added to the 118,478,000 barrels previously produced indicated an ultimate production of 963,878,000 barrels at Kettleman Hills. (The ultimate for the North Dome was placed at 938,160,000 barrels and for the Middle Dome at 25,718,000 barrels). The Kettleman Hills total ultimate recovery is the greatest listed among all the California fields.

In addition to Kettleman Hills, there are 8 other California fields that are expected to produce in the future more than 100,000,000 barrels each. Together, those 8 fields are estimated to have remaining reserves of 1,293,210,000 barrrels, or over one third of the state total. Those 8 fields and the estimated remaining reserves are as follows: Elk Hills, 307,500,000 barrels; Long Beach, 189,000,000 barrels; Ventura Avenue, 184,000,000 barrels; Santa Fe Springs, 144,800,000 barrels; Midway-Maricopa, 125,800,000 barrels; Dominguez, 116,000,000 barrels; Huntington Beach, 114,500,000 barrels; North Belridge, 111,610,000 barrels.

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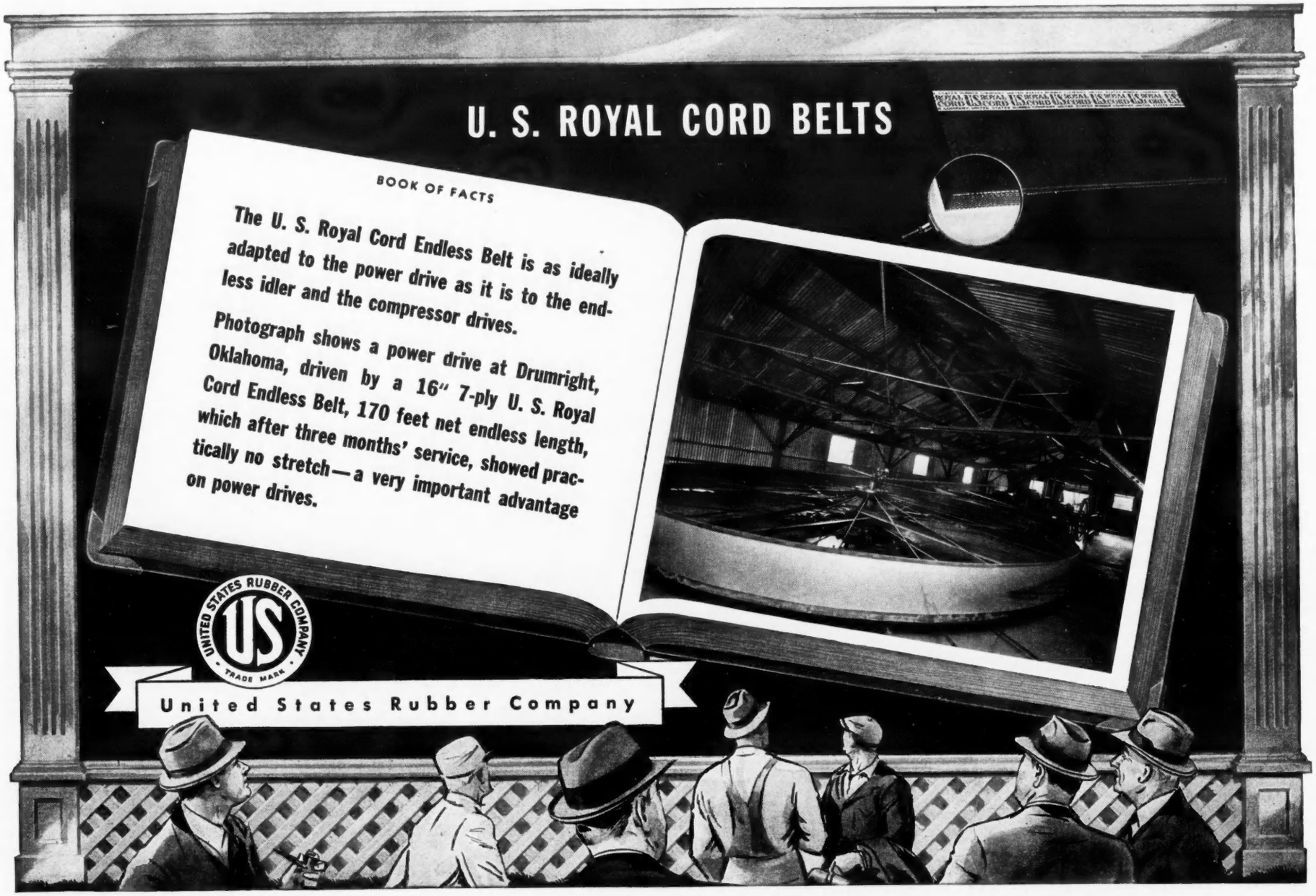
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MEN IN THE INDUSTRY'S NEWS

H. L. McQUISTON, who has been superintendent for Phillips Petroleum Company in its central division with headquarters at Oklahoma City, resigned effective August 1 to become affiliated with The Clymore Companies, and will headquarter in San Antonio. After leaving the University of Pittsburgh, where he studied mechanical engineering, McQuiston served as roustabout, cleanout helper and driller for two years in the Pennsylvania fields. In 1917 he came to Oklahoma, and joined the old Cosden Oil & Gas Company (now Mid-Continent Petroleum Corporation) as tool pusher. From this time on he served in various drilling and production capacities with a number of companies in the Mid-Continent. In 1928, he was made general superintendent of production for Independent Oil & Gas Company, supervising operation in Kansas, Oklahoma and Texas. When Independent Oil & Gas Company merged with Phillips Petroleum Company in 1930, McQuiston became superintendent of production in Kansas for the latter concern, with headquarters in Wichita. In July, 1933, he became superintendent over the newly created central division, taking in Seminole, Oklahoma City and the Texas Panhandle. In his new connection, McQuiston will be associated with Garland Clymore, at one time an employe under him. Clymore now is sole stockholder in several oil companies. McQuiston during his stay in the Mid-Continent has been active in vocation education and production divisional work of the American Petroleum Institute.

JACOB FRANCE, Baltimore, president of Mid-Continent Petroleum Corporation, is in Tulsa for a visit in the Tulsa office.

GLEN HARROUN, superintendent of production in the Fort Worth division of Sinclair Prairie Oil Company, resigned August 1. He announced that he would take a vacation, then become identified with an independent drilling and producing concern. He was connected with the Sinclair Interests about 14 years, having worked in the production department from 1912 to 1916, then served 10 years with the Shell Interests, except for military duty during the World War. He rejoined the Sinclair Interests in 1926, and when the Sinclair-Prairie merger was effected, Harrison was transferred in May, 1932, to Tyler to take charge of production in Texas, Louisiana, Arkansas and New Mexico. After the drilling rush in East Texas subsided he moved to Fort Worth, accompanied by his immediate office force.

In view of the company's widespread operations, Harroun was relieved of the West Texas and New Mexico district last May 1. This isolated but active district was assigned to J. W. Jordan, who was made general superintendent with headquarters at Midland.

Sinclair Prairie Oil Company will discontinue its production office at Fort Worth, and will not fill the vacancy resulting from the resignation of Harroun. Each of the district superintendents in the former Fort Worth division will report direct to production headquarters at Tulsa.

RICHARD H. MORRISON LEAVES TO ASSUME DUTIES AS VICE PRESIDENT OF CALIFORNIA-TEXAS OIL COMPANY

»

HEADQUARTERS ARE TO BE IN NEW YORK CITY

»

—Blank & Stoller.

RICHARD H. MORRISON

RICHARD H. MORRISON, manager of the Southern District of The California Company, subsidiary of Standard Oil Company of California, left Dallas headquarters last week for San Francisco for a series of conferences before assuming active duty in New York City as vice-president of the California-Texas Oil Company, Ltd. The latter concern was formed last June by Standard Oil Company of California and The Texas Corporation to operate as an integrated unit in Asiatic territory. Crude production held by Standard Oil Company of California through a subsidiary, Bahrein Petroleum Company, Ltd., on the Island of Bahrein, and on the adjacent mainland of Arabia by the California-Arabian Standard Oil Company, also a subsidiary, will be processed by a refinery nearing completion at Bahrein, and the refined products marketed by the foreign distributing facilities of subsidiaries of the Texas Corporation as result of the forming of the new corporation.

Morrison has been in charge of the Dallas operating headquarters of The California Company for about six years. The company is a major producer of oil in West Texas and Southeastern New Mexico, and recently has invaded Southwest Texas and the Gulf Coast. He will be succeeded by Henry J. Hawley, who has been assistant manager since February, 1934.

JOE C. EASON, chief clerk of the Fort Worth production division of Sinclair Prairie Oil Company, has been transferred to the company's East Texas operating headquarters at Troup, where he will be placed in charge of proration matters.

JOHN G. (JACK) PEW, assistant to the vice president in charge of production of Sun Oil Company, Dallas, left last week for Philadelphia to attend a conference of officials of the company.

T. H. RAKESTRAW, Tulsa, and R. O. Rhoades, Pittsburgh, have been transferred from the Gulf Oil Corporation to Kuwait Oil Company. This latter company is owned jointly by the Gulf Oil Corporation and the Anglo-Iranian Petroleum Company. Kuwait is a small country, on the eastern side of the Arabian Peninsula, facing the Persian Gulf, and adjoining Iraq on the north. Rakestraw will be in charge of drilling operations and Rhoades will act as resident geologist.

CAPTAIN J. W. FLANAGAN, Toronto, president of Andian National Corporation, Ltd., and director of International Petroleum Company, sails on the "Queen Mary" August 12 for an extended tour of Europe. Captain Flanagan, who took part in Cuba's fight for liberty, is known as the friend of several Latin-American governments.

C. GONZALEZ DE JUANA, petroleum geologist with Standard Oil Company of Venezuela for the past five years, has assumed duties of representative and district manager of Compania Espanola de Petroleos in Eastern Venezuela.

H. KLAUS, formerly superintendent of torsion balance for Gypsy Oil Company, Tulsa, and more recently gravity and seismic interpreter for Gulf Research and Development Corporation of Pittsburgh, Pa., has resigned to enter consulting work. He has opened office in the Broadway Tower, Enid, Oklahoma, and intends to specialize in torsion balance surveys and interpretations in the Mid-Continent area.

CHARLES B. ELLIS, general traffic manager of Gulf Oil Corporation, retired from active service on August 1. On February 15, 1907, Ellis resigned his position as Louisiana freight and passenger agent of Southern Pacific railroad to become traffic manager of Gulf Refining Company in New Orleans. Three years later this department was moved to Pittsburgh, where, under the direction and guidance of Ellis, it has become one

of the nation's finest organizations engaged in the direction of traffic. Since coming to Gulf, Ellis has been identified with numerous local and national organizations. He has been president of the Traffic Club of Pittsburgh, a member of the General Traffic and Shippers Council, a practitioner before the Interstate Commerce Commission, and a member of the transportation committees of the American Petroleum Institute and the National Petroleum Association. During the World War, Ellis was appointed to serve on the national petroleum war service advisory committee on tank cars.

D. R. KNOWLTON, general superintendent of the production department of the Phillips Petroleum Company, Bartlesville, sailed from New York City on the Queen Mary, Wednesday, July 29, for Europe, where he will join Mrs. Knowlton. They will attend the Olympics before returning to the United States.

ALFRED R. EYSSELL, formerly general manager of Plateau Oil & Gas Company, San Antonio, has resigned from that position to move to Louisiana to become associated with Louisiana Land and Exploration Company. Thornton Davis replaces him as vice president and general manager of the company. Davis was connected with Simms Oil Company for a number of years, but resigned from that company when it was merged with Tide Water Oil Company. He was in the independent field for several months during which time he drilled several wildcat tests in South Texas.

PAUL D. TORREY, geologist, has been named as the Texas representative for Sloan and Zook Company and has established headquarters in Houston. He is living at 4313 Rossmoyne Avenue.

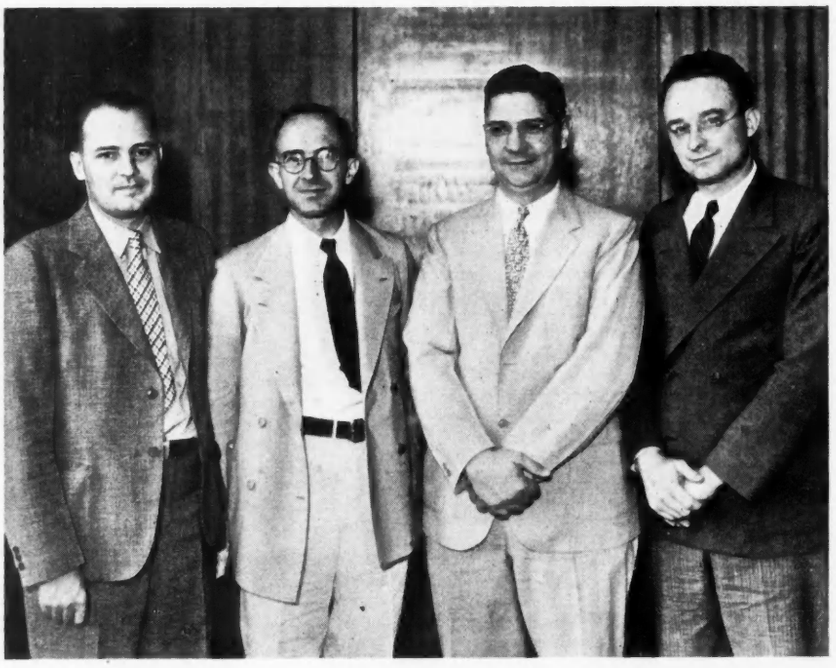
WESLEY I. NUNN of Ponca City, Oklahoma, has been appointed advertising manager for Standard Oil Company of Indiana, to succeed A. N. Steele, resigned. The new manager assumed his duties on July 27.

Nunn has been engaged in advertising and sales work since the war. He left the University of Oklahoma in 1917 to enter the first officers' training camp after three years of study, specializing in journalism and advertising. During the war he served as a lieutenant of infantry and later was in aviation.

Taking up agency work in Oklahoma City for three years, he handled Marland Oil Company account during the last two, and in 1922 joined the staff of that company as advertising manager and assistant to the director of marketing. From 1924 to 1927 he was manager of the retail marketing department of the Marland Company, and in 1928 he was manager of wholesale and export sales.

During 1929 and most of 1930 he operated a Buick-Cadillac agency at Ponca City. In January, 1931, he joined Continental Oil Company, which had absorbed the Marland Company, as advertising manager, in which position he has since been prominent in developing, managing, and merchandising the same type of advertising to which he will give his attention for Standard.

NEW A. S. M. E. MID-CONTINENT OFFICERS



Recently elected officers of Mid-Continent Section, American Society of Mechanical Engineers. Left to right: Dr. Emory Kemler, Gulf Oil Corporation, Tulsa, secretary; John H. Keyes, Shaffer Specialty Company, Tulsa, vice chairman; Roscoe G. Ayers, National Supply Company, Tulsa, chairman; C. H. Keplinger, Shell Petroleum Corporation, Tulsa, treasurer.

H. L. MOORE, for nine years district geologist in the Greater Seminole area for Atlantic Oil Producing Company with headquarters at Shawnee, has been promoted to the office of division geologist of the company with headquarters at Tulsa. His new work will include jurisdiction over the company's work in both Oklahoma and Kansas.

L. E. DEAN, field manager of North American Oil Consolidated, Inc., Los Angeles, is on a tour of the Oklahoma, Texas and Louisiana oil fields.

C. W. HAMILTON, assistant to W. T. Wallace, vice president of South American subsidiaries of the Gulf Oil Corporation, has returned to headquarters in New York, after a trip to Venezuela. He made the journey by airplane, flying 6973 miles in 67½ hours.

J. A. STARKEY, superintendent of production for Amerada Petroleum Corporation in New Mexico, with headquarters at Hobbs, is vacationing in Texas. He plans to try a hand at salt-water fishing after seeing the centennial shows at Fort Worth and Dallas.

WILLIAM J. SLOAN, vice president of Sloan and Zook Company, Bradford, Pennsylvania, has been in Houston during the past several days.

ING. DANIEL REY VERCESI, associated with the Institute of Geology and Drilling of Uruguay and with the "Ancap" refinery in Montevideo, and Dr. Reynaldo Deambrosia, chemistry expert, are making a study tour of the United States which will extend over a period of several months.

G. O. LOCKWOOD, safety director for The Empire Companies, Bartlesville, has been awarded a life certificate as a first aid trainer by the United States Bureau of Mines, for his efforts during the past five years in advancing first-aid training.

JACK A. HORNER and J. A. Carlson, in the legal department, and Paul W. Metterstrom, a new staff member of the geological department, recently joined the Shell Petroleum Corporation in Tulsa.

THEODORE CADY, at one time in the geological department of White Eagle Oil & Refining Company, is now a member of the Kansas conservation department.

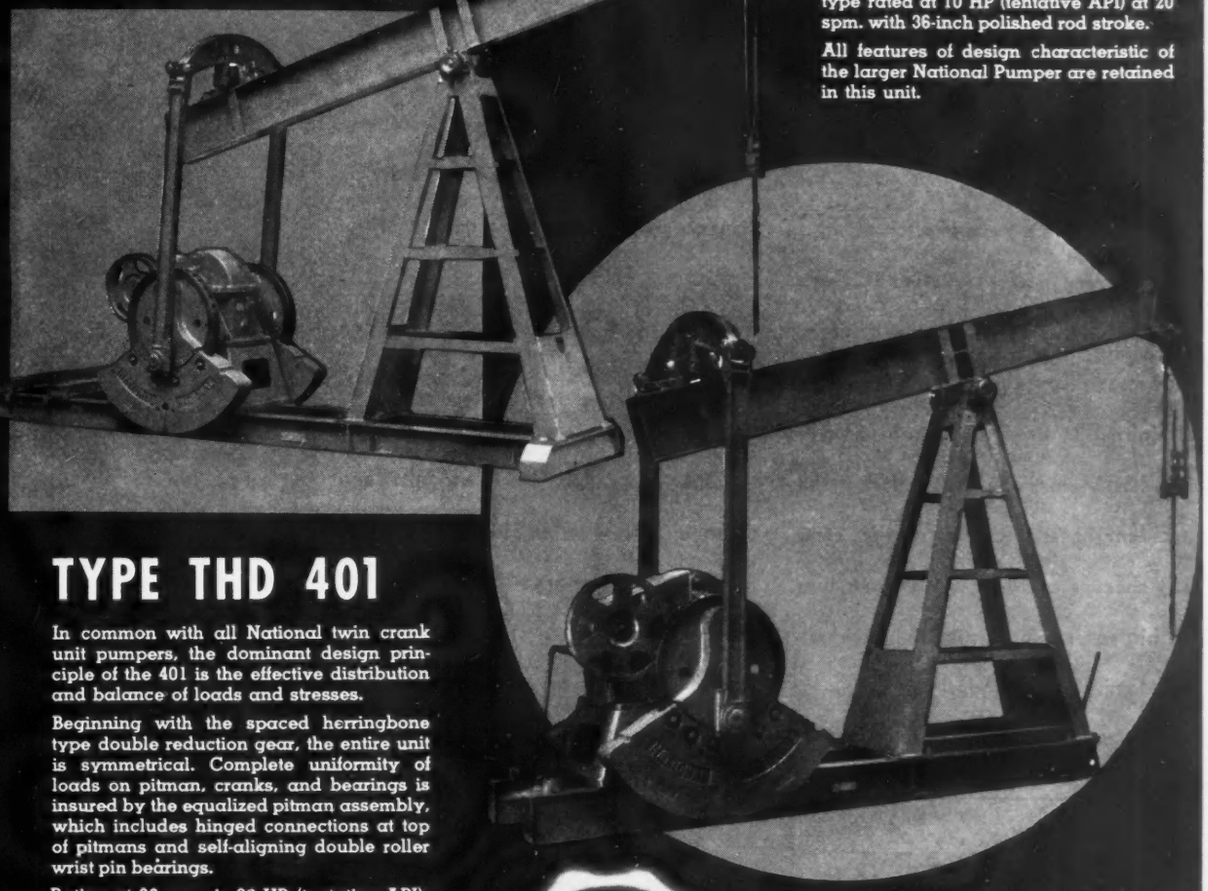
CHARLES E. HEWITT, formerly field representative in the Enid, Oklahoma, territory for Mid-Continent Petroleum Corporation, is now a member of the Ada scouting fraternity. His old district is now covered by G. W. Greenlee of Cushing.

WM. RIXOM has been appointed assistant general superintendent of drilling, production and pipe lines for Cia. Mexicana de Petroleo "El Aguila," S. A., at Tampico, succeeding E. S. Walne, who resigned to accept a position in Houston.

C. V. LEE, president of Lee Petroleum Corporation, owner of producing properties in West Texas, is recuperating in a San Angelo hospital after experiencing a serious illness.

UNIT PUMPERS

TYPE THD 201



Built for individual well pumping in the shallower fields. It is of the twin crank type rated at 10 HP (tentative API) at 20 spm. with 36-inch polished rod stroke.

All features of design characteristic of the larger National Pumper are retained in this unit.

TYPE THD 401

In common with all National twin crank unit pumpers, the dominant design principle of the 401 is the effective distribution and balance of loads and stresses.

Beginning with the spaced herringbone type double reduction gear, the entire unit is symmetrical. Complete uniformity of loads on pitman, cranks, and bearings is insured by the equalized pitman assembly, which includes hinged connections at top of pitmans and self-aligning double roller wrist pin bearings.

Rating at 20 spm. is 20 HP (tentative API).

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The same sheave, sheave bearing and lubrication method is used in the Straight Line Crown Block. Assembly and handling of the Crown Block is made easy by the two-piece construction.

Line-saving space plates between the sheaves are used on both blocks.

The two pieces of equipment might easily be called 1937 Models, and should be seen to be appreciated. However if you aren't in a position to drop by one of our stores just drop us a card, letter or wire and detailed specifications will gladly be sent.

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Rodessa Exchange

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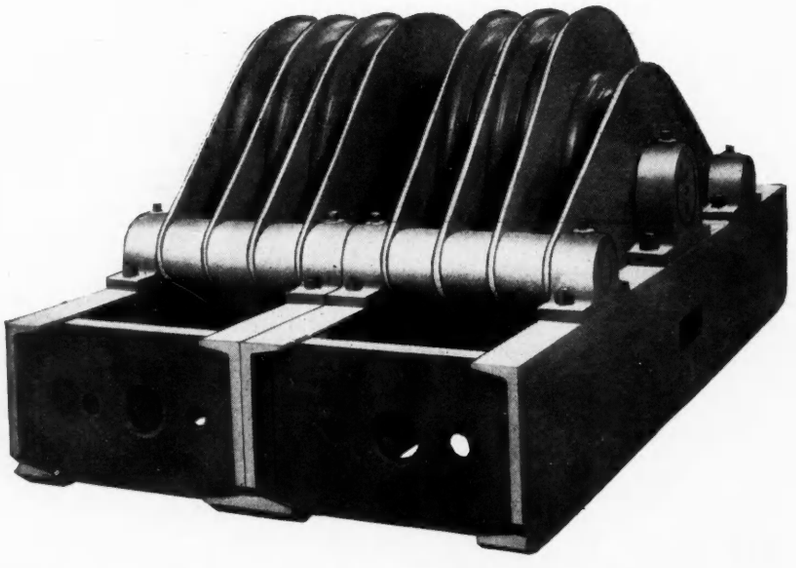

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Exhaust Pipe Length

AS A FACTOR IN TWO-CYCLE

Engine Economy

By JOSEPH LISTON, Assistant Professor,
School of Mechanical Engineering,
The University of Oklahoma,
Norman, Oklahoma.

PART 1

IT has been known for a number of years that the length of the exhaust pipe had considerable to do with the economy of operation of two-stroke cycle engines. Engineers have generally understood that an incorrect length of pipe resulted in poor scavenging of the cylinder and a limited amount of testing has been done toward determining the proper length of pipe for individual engines[1], but apparently, very little work has been done in the way of quantitatively determining the real importance of pipe length.

To study this problem, some tests were recently undertaken on a 80-horsepower Diesel*. The problem is not yet completed, but sufficient information has been obtained to show that pipe length is relatively quite important and has much to do with the satisfactory operation of this type of prime mover.

This engine was installed in the engineering laboratories of the University of Oklahoma a little more than a year ago. Its primary purpose was for the instruction of students in mechanical and petroleum engineering, and soon after it was installed, rather extensive tests were outlined and regularly conducted. However, in all earlier tests, the specific fuel consumption was too high, and no amount of adjusting of the engine seemed to improve the situation.

This Diesel is a well known and proved design, and it was felt that the trouble lay elsewhere than in the engine. Finally, as the result of studies of the exhaust line cards, it was concluded that the exhaust pipe was not of the correct length for the speed at which the engine was being operated. This proved to be the case.

In outlining the special tests, it was decided to vary the speed of the engine rather than change the pipe

*Much of the special testing was done by W. A. Eskridge, J. E. Grady, and W. Clarke.

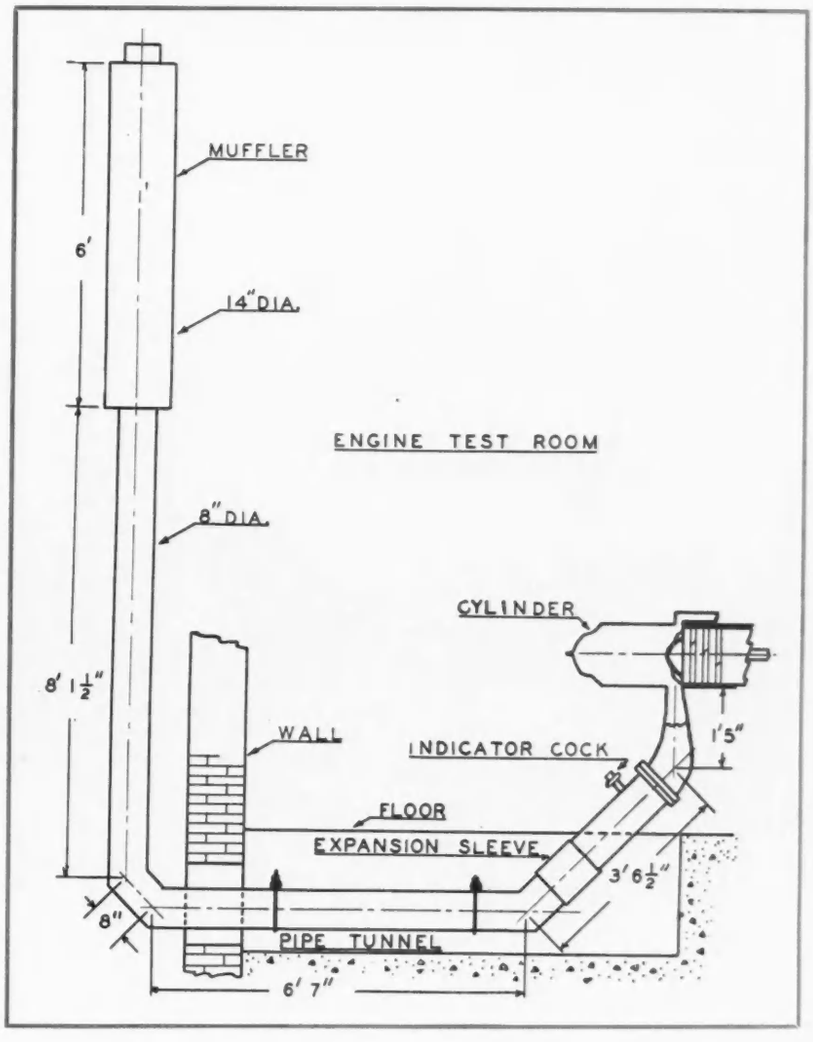

FIGURE 1
Exhaust pipe arrangement used during the exhaust line tests.

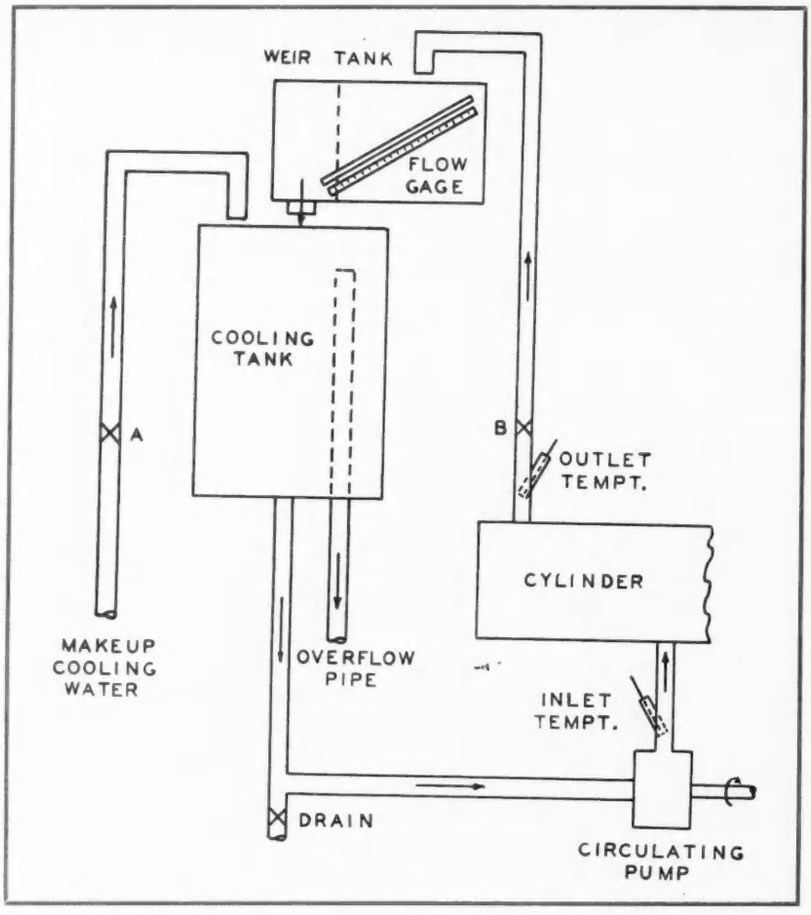

FIGURE 2
Cooling and flow measuring system used for controlling engine temperature.

length for each test run. It has been shown[1,2] that exhaust pipes act very much like open organ pipes, and the frequency of the impulses is determined in part by the speed of the engine. Further, for each speed, there is a definite length of pipe that will give the maximum performance. Hence, as a preliminary beginning, it was decided to vary the speed of the engine over the entire range at which it would operate and see if there was some speed within that range at which the pipe as already installed, Figure 1, was of the correct length.

Accordingly, this procedure was undertaken, but, even though considerable care was exercised in taking the fual consumption readings, the specific fuel rate in pounds per brake horsepower hour was very erratic. The results varied over a considerable range, and at one speed, values near the manufacturer's specifications were obtained. But a check run failed to verify many of the points obtained, and some values were lower than before.

It was concluded from this that some uncontrolled factor was causing the trouble, and a study of the data already obtained showed that the outlet cooling water temperature had been varying quite widely during the tests. The system used for regulating the cooling water, Figure 2, permits of rather accurate temperature regulation, but little effort had been made to control the temperature closely because it had not been realized that this item was so important.

However, as the data showed outlet cooling water temperature to be the most widely varying item, it seemed the logical source of trouble. A short check run was made by operating the engine at a given speed and load, and, for a number of different outlet cooling water temperatures, the fuel consumption was accurately measured. The results shown in Figure 3 were obtained.

This curve shows quite clearly the reason for our previous erratic results as it can be seen that even a few degrees variation in outlet cooling water temperature near the critical part of the curve will cause a very decided change in the economy of operation. The probable underlying cause of this effect is that with cooling water temperatures too low, the charge of air is cooled excessively during compression. This cooling produces much the same effect as reducing the compression ratio, i.e., the efficiency of operation is reduced. With temperatures higher than the best values, the air charge is heated and expanded so that less than the desired amount of air is admitted. As Diesels are somewhat sensitive to the air-fuel ratio, the reduced air charge probably means incomplete combustion and wastage of fuel. This will then reduce the efficiency of operation.

Following some study of Figure 3, it seemed logical to return to the original series of tests of the effect of speed on the fuel consumption, but the uncertainty of the correct temperatures to use at higher and lower speeds led to the decision to run some additional tests on the effect of outlet cooling water temperature at other engine speeds. This would show any effect of speed on optimum cooling water tem-

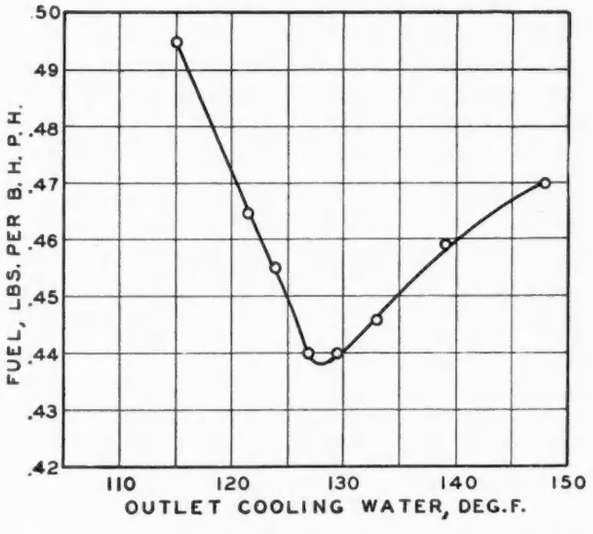

FIGURE 3
Effect of outlet cooling water temperature on the economy of operation of test engine.

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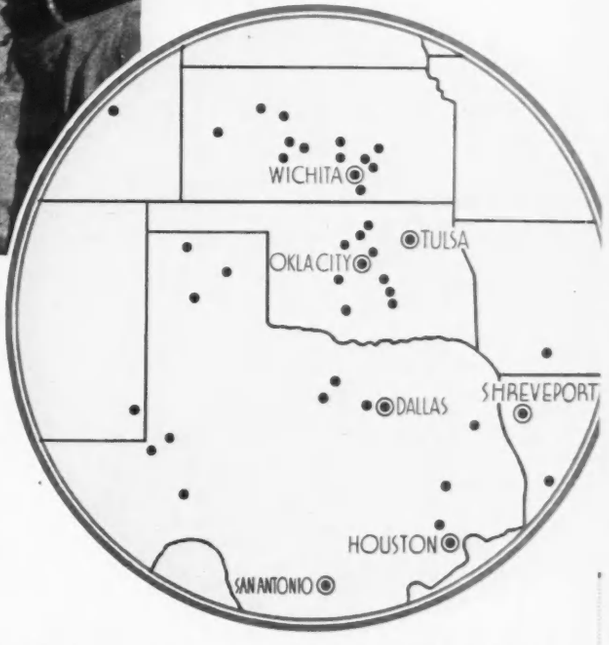

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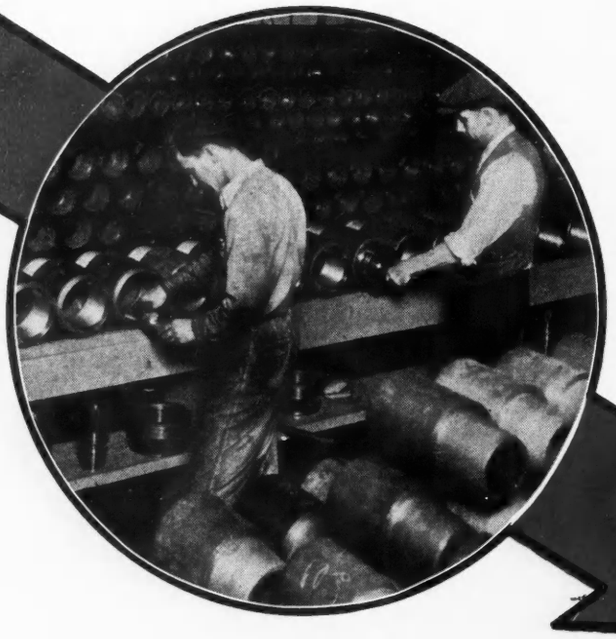

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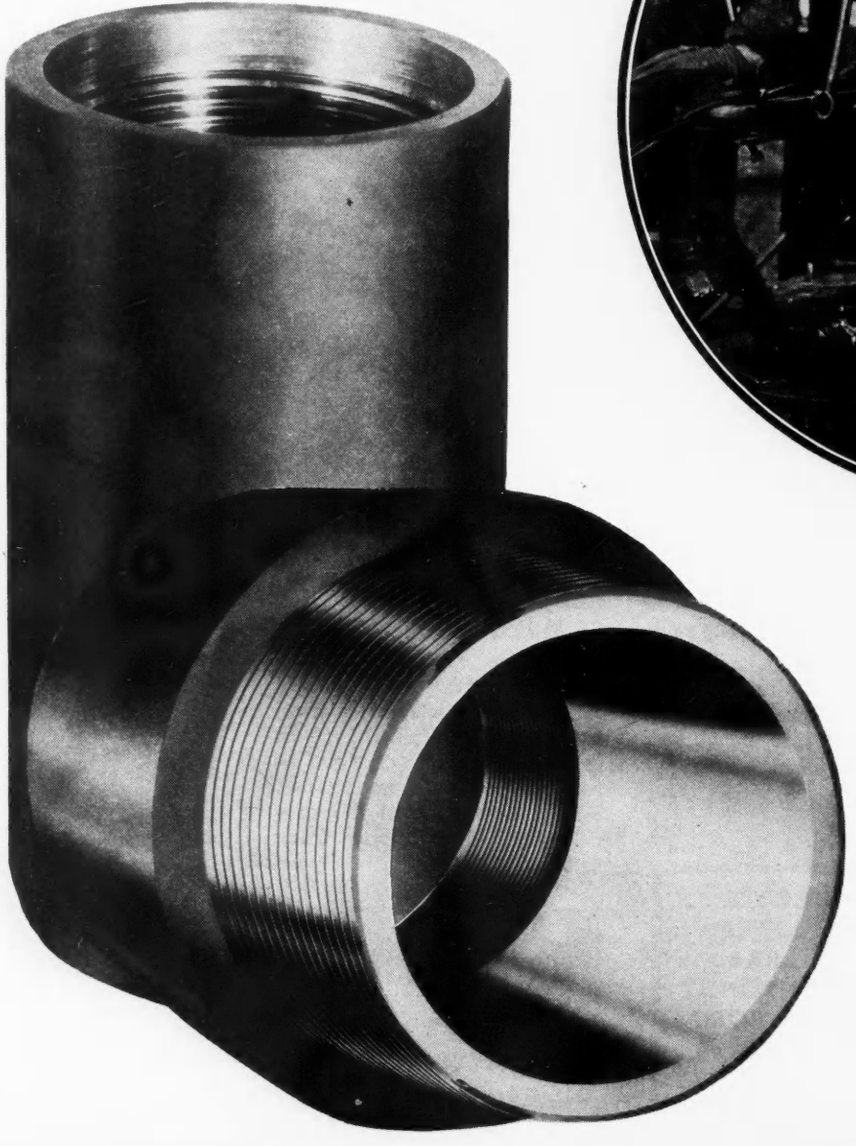

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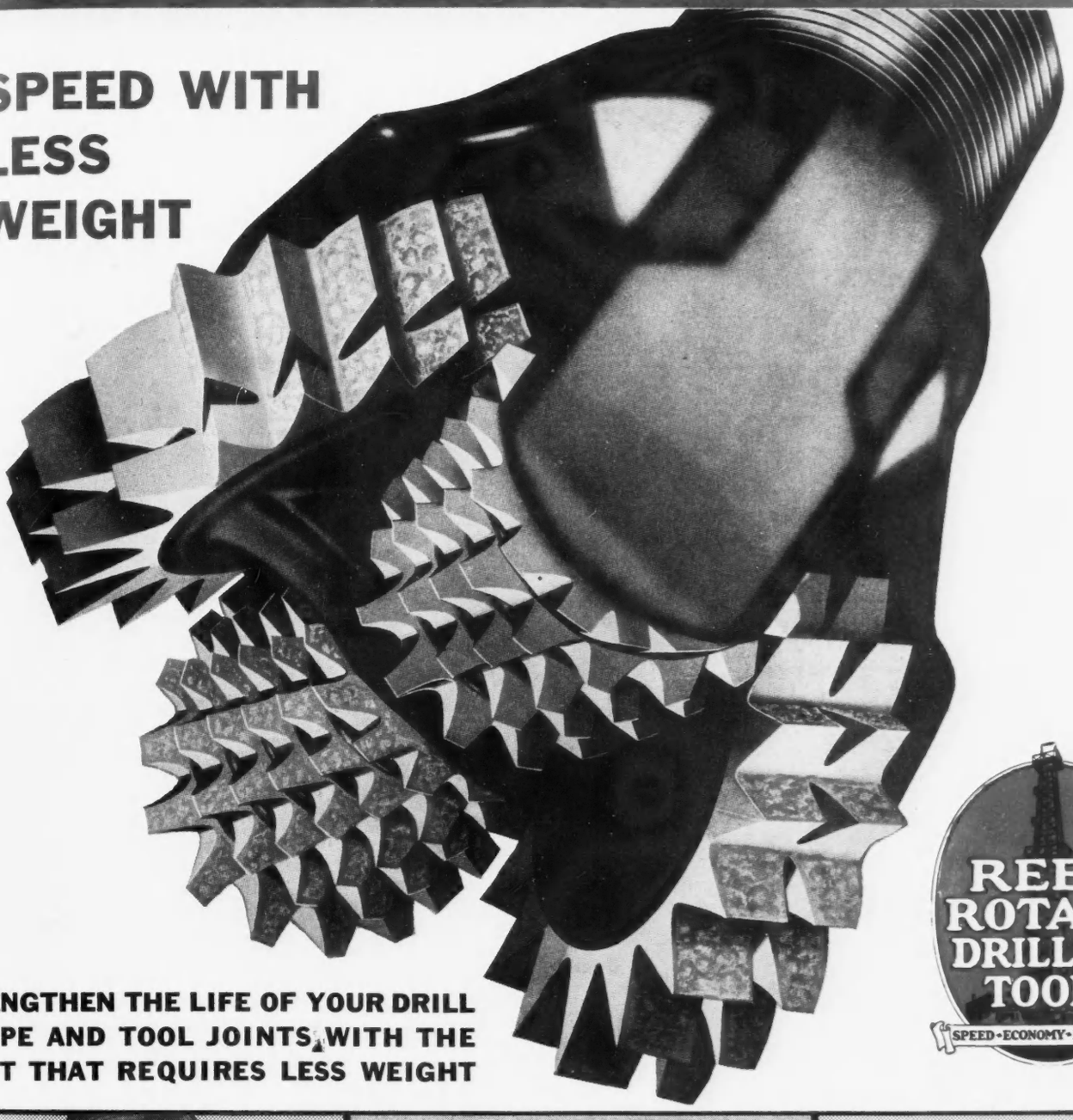

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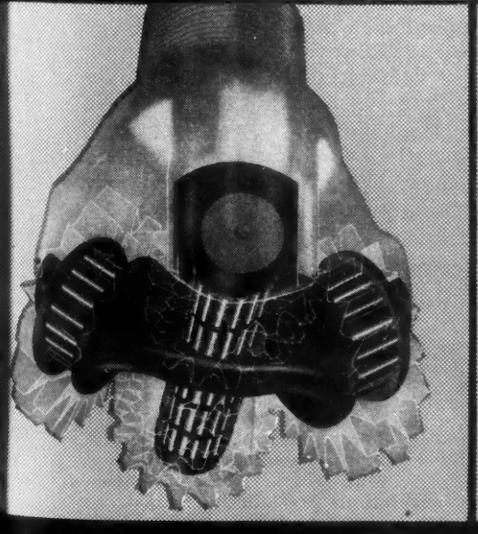

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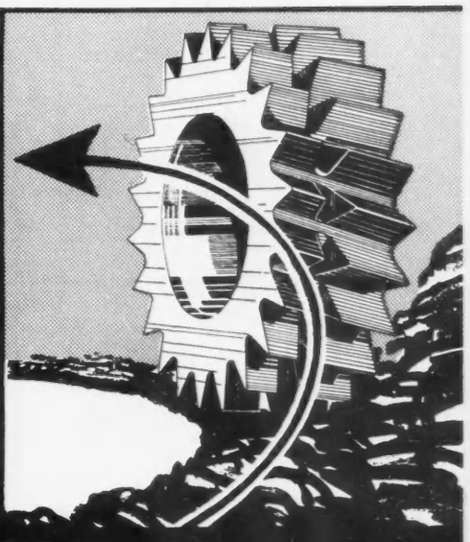

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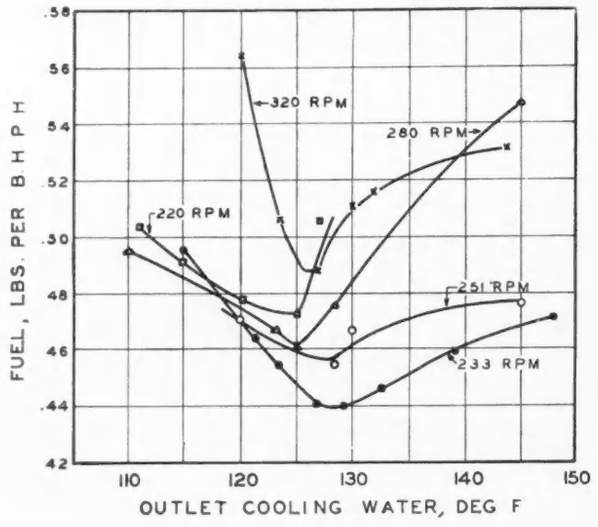

FIGURE 4

Effect of outlet cooling water temperature on the economy of operation at several different engine speeds.

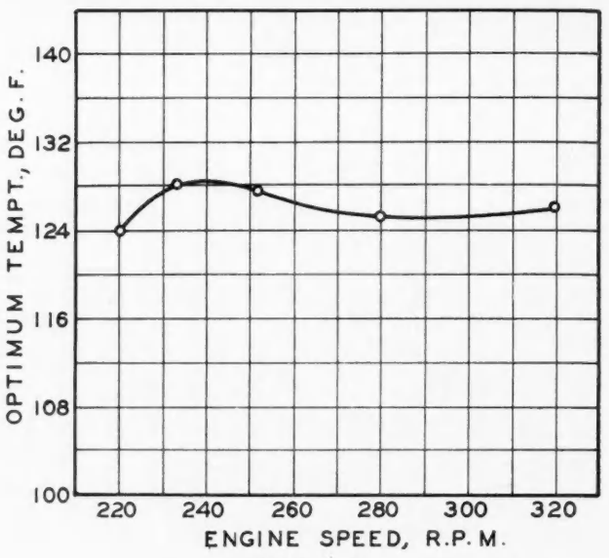

FIGURE 5

Variation of outlet cooling water temperature which gave best economy at various engine speeds.

perature, and in addition, the effect of exhaust pipe length against speed for the different temperatures could be shown by cross plotting.

The effect of outlet cooling water temperature at several different speeds is shown in Figure 4. At each speed, the effect of temperature is quite noticeable, but the curves at the higher and lowest speeds are displaced upward. In other words, the effect of temperature is shown on each curve individually, and the effect of exhaust pipe length is shown by the displacement of the curves vertically.

The variation of optimum cooling water temperature with engine speed is shown in Figure 5, and the effect of speed on economy of operation for several different temperatures is shown in Figure 6.

It is probable that Figure 5 is fairly representative of desirable outlet cooling water temperatures for oil field types of engines, but, until verifying data are available, it should be used with caution on widely different types of engines. It should be noted in particular that the inlet cooling water temperature for these tests was close to the outlet temperature. The effect of a greater range between inlet and outlet temperatures might be a higher or lower optimum temperature for best operation.

The difference between the inlet and outlet temperatures may be increased somewhat by the operation of valve B, Figure 2. By partially closing this valve, the rate of circulation is decreased and the temperature rise through the cooling jacket is increased. To prevent too high an outlet temperature valve A can be opened to admit more makeup cooling water to the cooling tank. Hence, by proper manipulation of valves A and B, the cooling water may be maintained at almost any desired condition. Some variation in the optimum outlet temperature would probably result from a lowered inlet temperature, but this factor has not been investigated in the tests thus far.

Having determined the effect of outlet cooling water temperature on economy of operation for a sufficient number of test conditions, the effect of varying the speed was determined and is shown in Figure 6. At all temperatures shown the best conditions lie between 230 and 240 revolutions per minute, and, as is readily observed, a marked increase in fuel consumption resulted from operating at speeds either above or below this range. Particularly noticeable is the very rapid increase in fuel consumption at the lower end of the speed range when the outlet temperature was at or above the optimum value. For instance for a temperature of 127 degrees, a decrease in speed of about 13 revolutions per minute below the optimum value gives an increase in fuel consumption of over 13 percent.

To illustrate this in another way, assuming a 100-

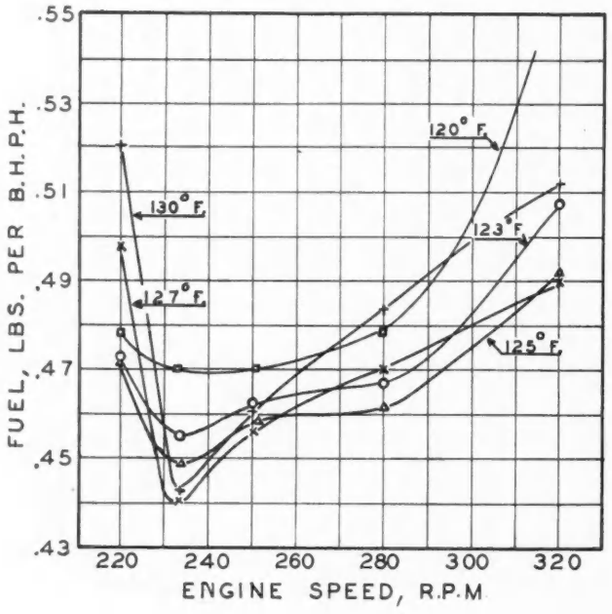

FIGURE 6

Effect of engine speed on economy of operation for a fixed length of exhaust pipe. The pipe length, figure 2, is correct for 233 revolutions per minute.

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"LIGHTWELD"
for 18-8 stainless steels
"STAINWELD A"
for 25-12 stainless steels
"STAINWELD B"
for 4-6 chrome
"CHROMEWELD 4-6"
for high manganese steel
"MANGANWELD"
for moderate shock and abrasion
"HARDWELD"
for rolling or sliding abrasion
"WEARWELD"
for impact and severe abrasion
"ABRASOWELD"
for cutting edges
"TOOLWELD"
for cast iron
"FERROWELD"
for welding aluminum
"ALUMINWELD"
for general welding purposes
"STABLE ARC"
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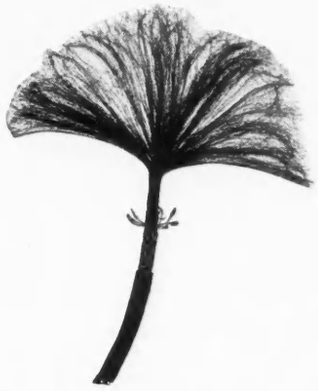

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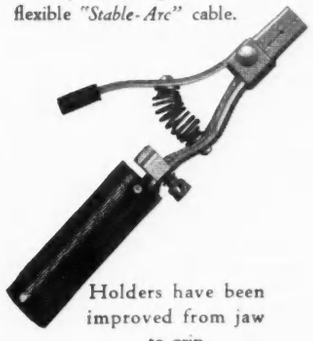

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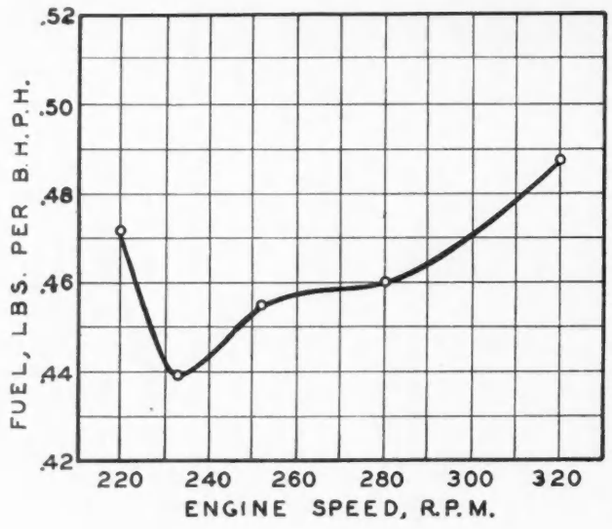

FIGURE 7

Effect of speed on ecocnomy of operation at the best outlet cooling water temperature conditions.

horsepower Diesel operating at say 3600 hours per year and burning 35 A.P.I. gravity fuel costing 4 cents per gallon, the cost of fuel at .44 pounds per brake horsepower hour will be about $896.00 per year. At .498 pounds per brake horsepower hour, the cost per year will be about $1,014.00, an increase of $118.00 per year for fuel which may be laid to operation with the wrong length of exhaust pipe. Obviously, the possible savings in a large installation are considerable.

Figure 7 shows the effect of speed on economy of operation when the optimum temperature at each speed is used.

The results shown so far have been for a load of approximately three-fourths rated power. As the speed of the engine was varied, the rated power also varied in the usual characteristic way typical of all internal combustion engines, and in order to be reasonably comparable, it was necessary to select a representative load or percentage of rated load and maintain this same percentage at each speed. Even then, some effect of speed on performance may enter into the results, but the extent of this effect cannot be fully determined until tests are made with the exhaust pipe length actually changed to the correct length at the higher speeds. This problem will be attempted as soon as possible.

The effect of varying the load at a given speed is shown in Figure 8. In this figure, curve A shows the specific fuel consumption in pounds per brake horsepower hour for a speed at which the exhaust pipe length is not correct. The lowest portion of the curve is too high for a Diesel and the curve rises too rapidly on either side of the minimum point. This means that it would be uneconomical to operate the engine at either low loads or near full load.

Curve B shows the economy of operation when the engine was operated at a speed at which the exhaust pipe length was correct. The decided improvement is clearly evident, the curve being flatter, thus giving reasonable economy over a wider range of load, and the fuel per horsepower hour is well below curve A. Hence, for a specific case at least, the length of the exhaust pipe can mean the difference between good and poor economy of operation.*

It seemingly has not been fully realized by Diesel men in general that the amount of air an engine uses is just as important a criteria to its performance as the amount of fuel used. This is probably due to the fact that the air is free and less noticeable whereas the fuel must be purchased and is more in evidence. However, this does not alter the importance of breathing capacity in determining how well the engine will carry the load and operate economically. Hence, in studying the effects of exhaust line length, it is of interest to note the effect of air consumption and air fuel ratio.

Figure 9 shows the variation of air fuel ratio (by weight) with load for the condition, A, when the engine was operating at a speed at which the exhaust line length was not correct, and B when the exhaust was correct. The air-fuel ratio increases rapidly with a decrease in the load since, for this type of engine, the governing is taken care of by varying the quantity of fuel injected. As the speed is held approximately constant, by the governor, the quantity of air taken in is approximately the same at all loads with the result that the air-fuel ratio varies inversely with the load.

For the fuel used, the chemically correct air-fuel ratio is about 14.75 to 1, and from inspection of Figure 9, it is seen that throughout the entire range of load, the actual air-fuel ratio is far in excess of this value. For case A, the lowest air-fuel ratios recorded were well above 20, and this represents quite

*While some designs of Diesels give still lower fuel rates, it should be borne in mind that this engine is designed primarily for oil field use where rugged construction is just as important as detailed refinement which will give the maximum possible economy but at greater maintenance cost and less reliability.

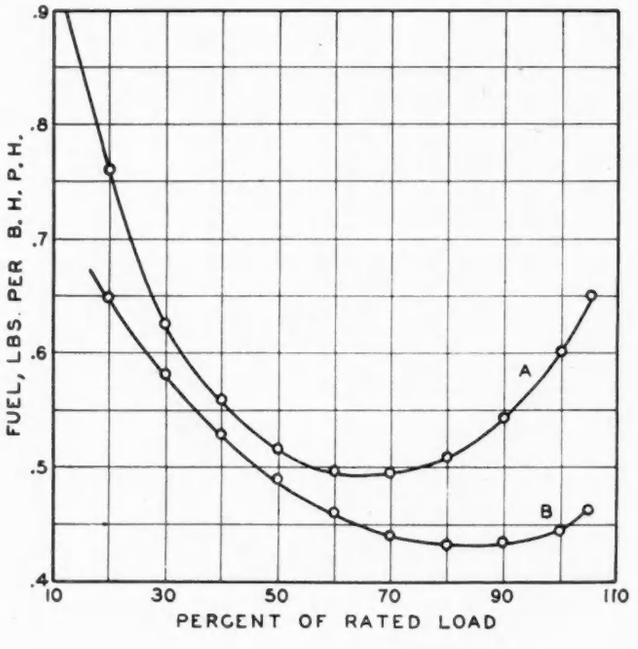

FIGURE 8

Variation of engine economy with load for (A) a speed at which the exhaust pipe length was not correct, and (B) the correct exhaust pipe length-speed combination.

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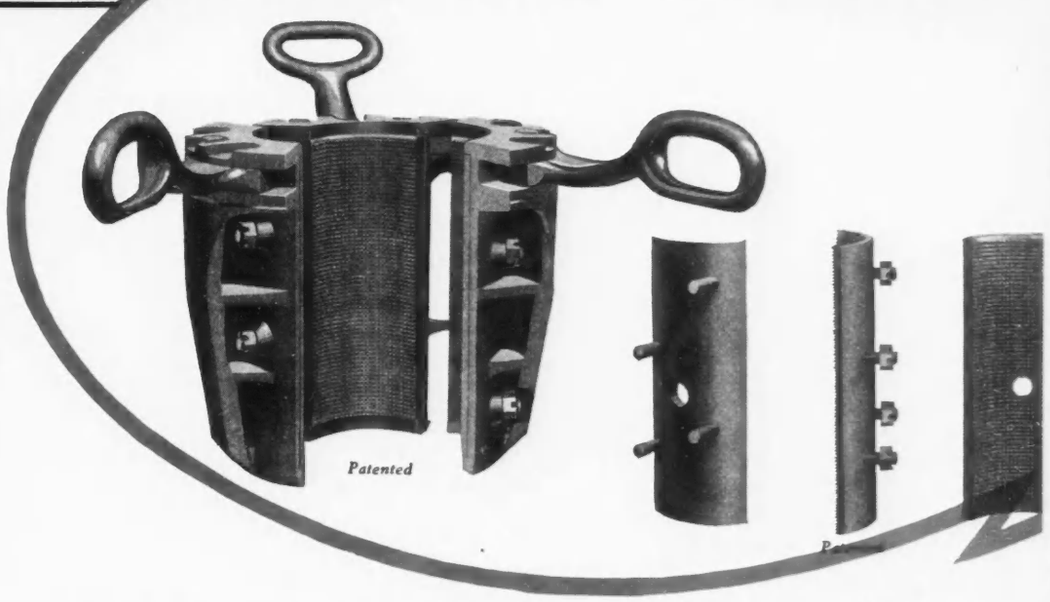

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a large percentage of excess air, but the engine gave a smoky exhaust. It might be well to recall at this point that Diesels in general require some excess air as they have much less time in which to mix the fuel and air than in comparable types of gas or gasoline engines. However, the point of interest in Figure 9 is the effect of the exhaust line in displacing the air-fuel ratio values upward. For instance, at full load, curve A shows an air-fuel ratio of about 26 whereas curve B shows an air-fuel ratio of 40. As has been stated, the engine smoked excessively when operating under case A, but during test B, the exhaust was almost clear even at full load, and the engine much more readily carried an overload. As all other conditions of operation were essentially the same during these two tests, it is logical to conclude that a correct length of exhaust pipe not only improves the economy of operation, but also increases the maximum power output[3] and decreases the tendency of the exhaust to smoke at high loads. This last is an observation that can be made in the field without instruments, and while other factors may cause a smoky exhaust, this trouble can be an indication of incorrect exhaust pipe length.

The effect of air-fuel ratio on the economy of operation has long been a factor in improving the performance of gas and gasoline engines. As Diesels have many things in common with the other types of engines, it would seem that air-fuel ratio would also have much to do with their operation. This is the case as is clearly shown in Figure 10. For the two load tests mentioned above, the air fuel ratios were plotted against the brake specific fuel consumption. The displacement downward of curve B shows the effect of exhaust line length, but the most interesting thing about the curves is that, in each case, the most economical operation occurred at an air-fuel ratio of 50. For B this corresponds to a load of about

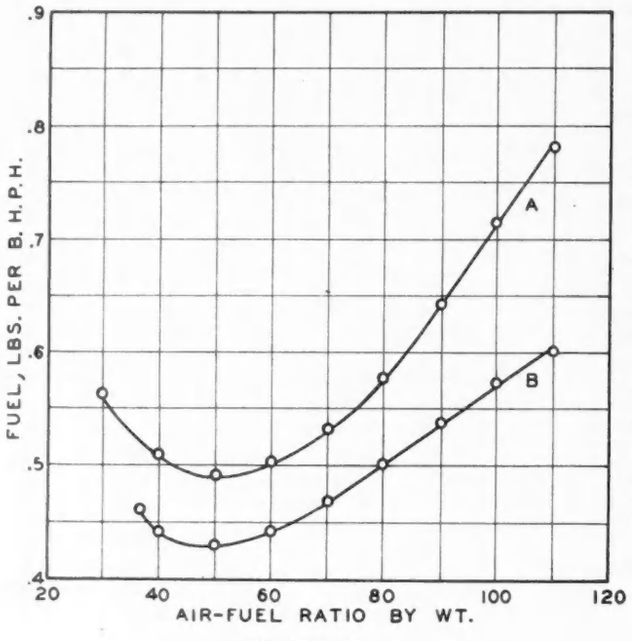

FIGURE 10

Effect of air-fuel economy of operation for (A) an incorrect exhaust pipe length, and (B) the correct exhaust pipe length. Note that in each case best economy is had at an air-fuel ratio of 50.

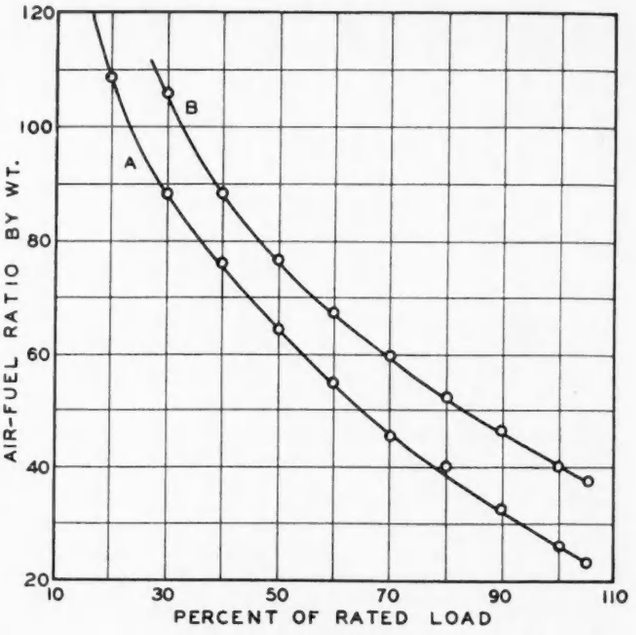

FIGURE 9

Variation of air-fuel ratio with load for (A) a speed at which the exhaust pipe length was not correct, and (B) the correcct exhaust pipe length-speed combination. The increased air supply aids greatly in completely burning the fuel.

83 percent, but for A the engine would have to be operated at about 65 percent of rated load to get best economy and even there it would be much more uneconomical than B. This would mean that for best operation, with the wrong length of exhaust pipe, larger units would have to be used to obtain a given power output. The added first cost of larger units is further evidence of the need for carefully checking the pipe length of installations.

Figure 10 is of additional interest as a means of checking the relative effectiveness of combustion in the Diesel. It would seem that the better the mixing of the fuel and air in the cylinder, the less the excess air percentage would have to be to get economical operation. This would place the minimum fuel consumption at a lower value of air-fuel ratio and give more power for a given size and speed of engine. Reducing the excess air necessary is, therefore, quite important to Diesel engine designers, and much of their time has been taken with improving combustion characteristics. A great deal of this effort has been directed toward increasing the rate of mixing, but in view of the improvements observed in this investigation, some further efforts toward correlation of engine manifolding with engine design might be profitable.

The second and concluding part of this article will appear in an early issue.

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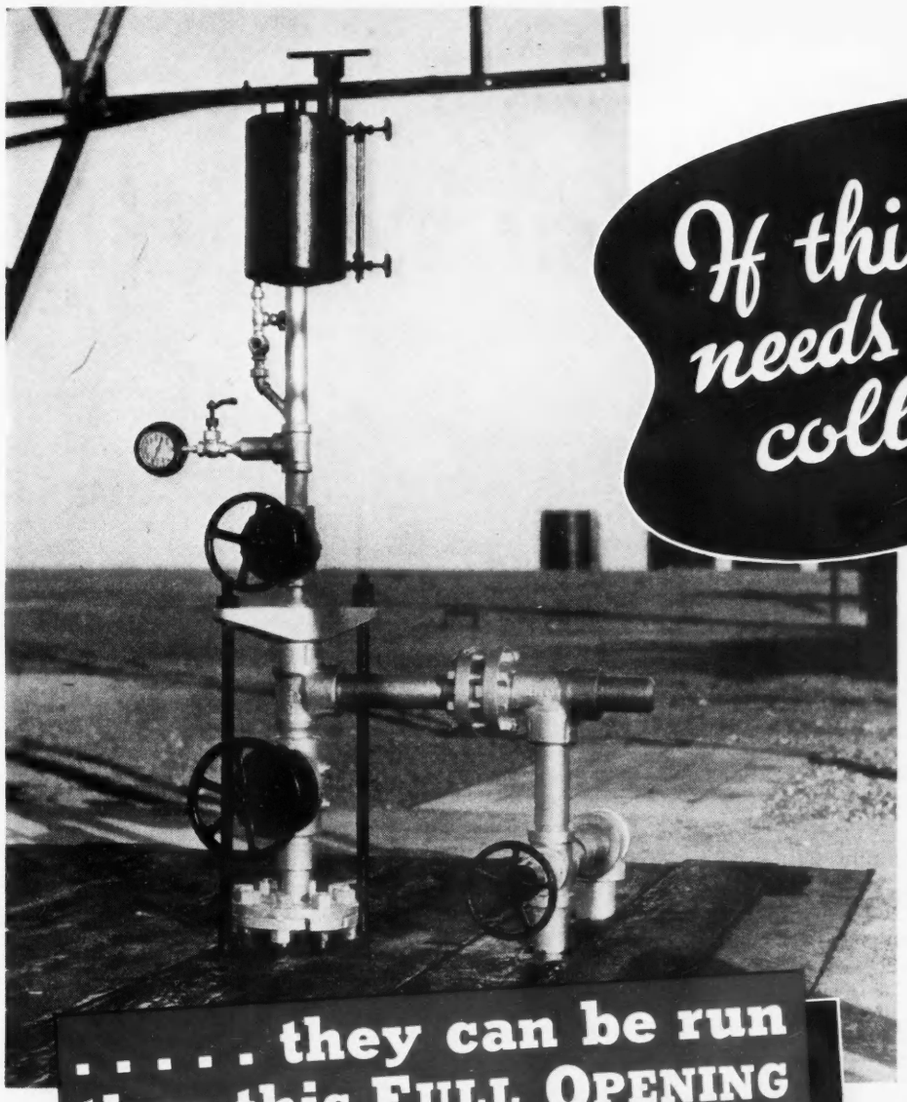
[1] Correct Exhaust Piping Improves Engine Performance, by H. F. Shepherd, Power, March 15, 1932.

[2] The Design of Exhaust Systems for Type 10 Engines, Data of the Cooper-Bessemer Corporation.

[3] Shepherd, Diesel Engine Design, page 130.



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FOUR WELLS ARE TO BE DRILLED FROM ONE GENERATOR LOCATION BY

Direct-Current Rig

By BRAD MILLS, Associate Editor

A DIRECT-CURRENT, variable-voltage drilling outfit of unusual flexibility has been assembled by Superior Oil Company and is being used in the Bruni, Texas, district. The arrangement is such that at least four wells may be drilled with one setting of the power plant, a provision that is saving much time in this shallow area.

The size of the Diesel-electric power plant and slush pump is out of proportion to particular drilling requirements, but their operation is very reliable. When a heavy type drilling rig and a second power pump are placed with it at a later date, the outfit will be an ideal setup for deep wildcatting in localities where fuel and water are scarce.

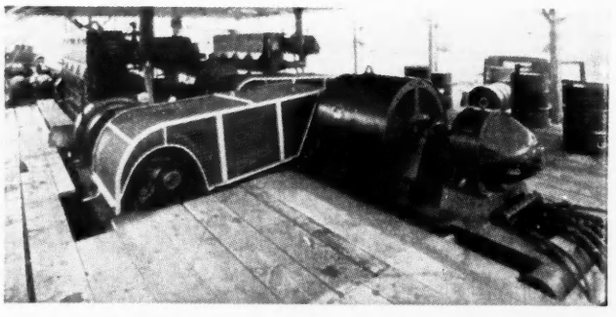
The shallow drilling depth in the Bruni district provides only a light workout for the heavy power plant and pump, but the available excess of power has not proved a handicap. Wells are completed at about 2200 feet and one well per week can be drilled. The time required between the completion of one well and spudding in of another is not more than 24 hours. Where it is necessary to move the power plant, the time interval between the completion of one well and spudding in of another is about three days.

The electrical equipment for this drilling outfit consists principally of one generator set, which includes one 250-kilowatt and one 200-kilowatt generator and exciters; two 200-horsepower drilling motors; one 300-horsepower mud pump motor; one variable-voltage control equipment for the machines; and two five-horsepower auxiliary pump motors and control. The drilling equipment would be considered a light type, when compared with the heavy rigs in operation in the deeper districts, but it is suitable for drilling in the Bruni district.

The generators, motors and controllers were designed to provide an easily manipulated and maintained, flexible and efficient transmission between Diesel engines and the various power-driven elements of a rotary type well drilling rig. The combined operating characteristics of generators and motors are such that the Diesel engines may be operated at constant speed, while the speeds of mud pumps and rotary table or draw works are independently regulated to obtain the desired results. Maximum torques and maximum speeds are delivered to the driven members at relatively light loads on the Diesel engines. Because of the non-overloading characteristics of the generators, it is not possible to impose a load on the engine greater than a predetermined amount. Facilities are provided for adjusting the generators to bring the peak load up to but within the capacity of the engines. At the point of maximum load on the engines, the electric motors are operating at or near full load speed and torque and are delivering slightly more than the rated horsepower.

Each main generator is provided with three field windings: (1) A separately excited shunt field, reversible in direction through the action of a master switch and contactors. This field determines the polarity, or direction, in which the generator voltage will build up, and consequently the direction of rotation of the motor or motors connected to this generator. (2) A self excited shunt field which builds up in response to the generator voltage and is connected to add to the separately excited field. (3) A differential series field, connected to oppose the two shunt fields. This field is so proportioned that when the generator armature and series field current increases to two times rated full load value, the series field is practically equal in strength to the combined shunt fields, and the generator voltage is reduced almost to zero.

The main motors are all shunt wound, with fields excited at a constant value with fixed polarity, and with armatures connected to the corresponding generators. Direction of rotation of motors is controlled by controlling the direction in which the generator voltage builds up, and speed of the motors is controlled by the value of the generator voltage.



Generating plant, Diesel-Electric Rotary Rig Drive

The exciters are flat compound wound to maintain essentially constant voltage from no load to full load. The exciters are not connected in parallel.

The main variable-voltage control is designed to handle the two generators, twin drilling motors, and single mud pump motor, with provision for possible future addition of a second mud pump motor of rating

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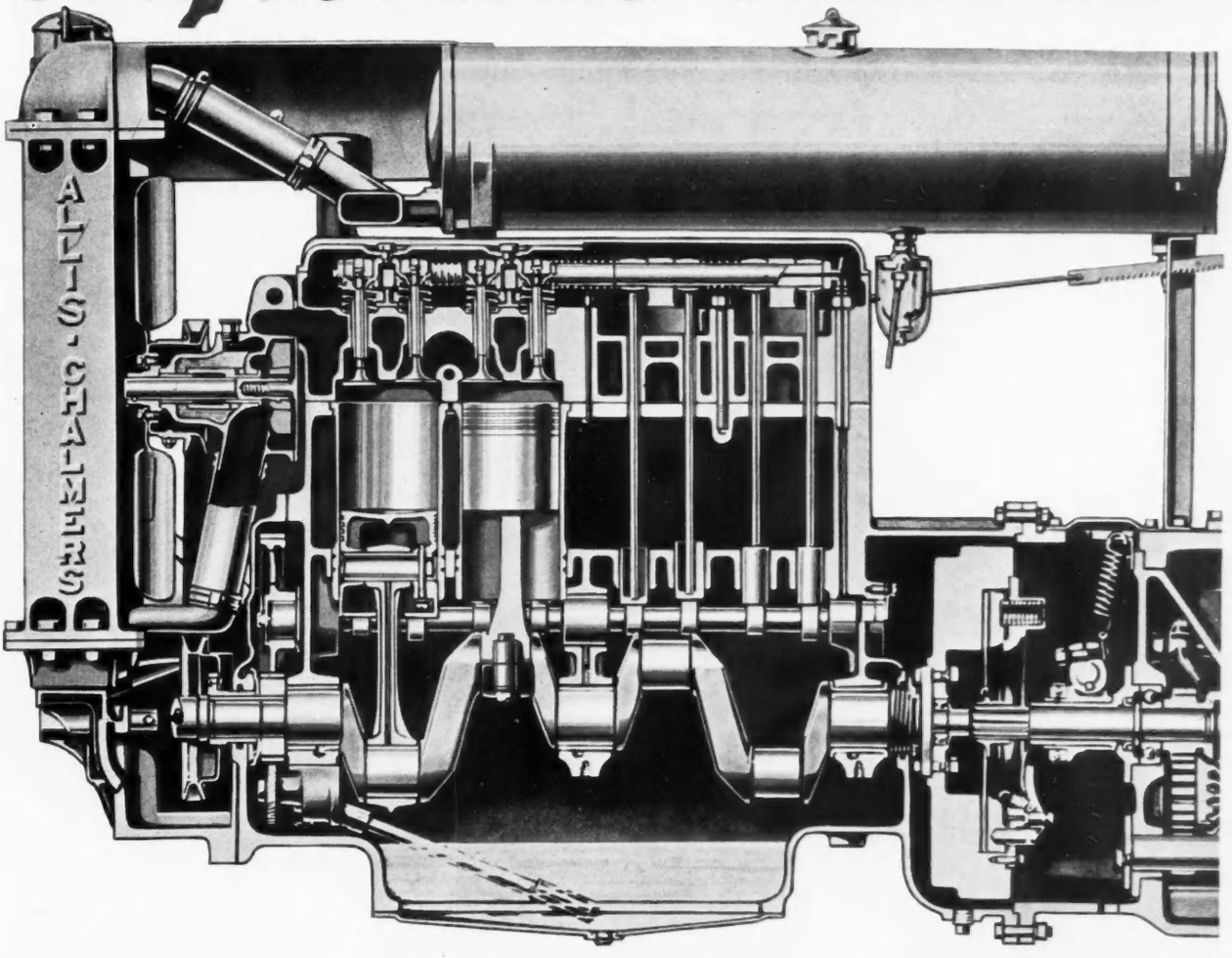

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up to 200 horsepower. In addition the control equipment includes relays which operate in conjunction with pyrometers furnished on the engines, and which reduce the nominal rating of the 250-kilowatt generator to 200 kilowatt when the two generators are operated in series for hoisting.

The two drilling motors are mechanically coupled to the twin drilling gear, and therefore both motors rotate at the same speed and in the same direction. Electrically these two motors are connected with armatures in series and fields in parallel. Provision is made for operating the drilling gear with either of the drilling motors disconnected. For operation with a single drilling motor, the unused motor must be shunted and knife switch No. 1 placed in the "up" position in order to feed the motor from the 200-kilowatt generator. The selector switch must be in the "independent" position.

The 300-horsepower mud pump motor is V-belted to the mud pump and can be operated in only one direction of rotation. Three independent, single-pole, double-throw knife switches are provided to permit selection of the generator from which the two drilling motors or the mud pump motor will take power.

When the mud pump motor is taking power from the same generator as the drilling motors, the drilling motors cannot be reversed. This provision is made so that the mud pump motors cannot be reversed.

The two master switches mounted on the derrick floor rack are operated by means of two concentric handwheels on the control mechanism mounted on the draw works post convenient to the driller. One switch always controls the voltage of No. 1 generator, and the other always controls the No. 2 generator. These master switches have 20 positions on either side of the "off" position. In the first position, the generator voltage builds up to a minimum value, and in the following positions the voltage is increased in gradual steps to its maximum value at the last step.

Clockwise rotation of either draw works post handwheels causes the generator voltage to build up in the direction to produce "forward" rotation of the motor. Counterclockwise rotation of either handwheel produces "reverse" rotation of the motor. The pump motor cannot be reversed by manipulation of the master switches. If the mud pump motor runs in the wrong direction, the interchange of the two shunt field leads of this motor on the back of the main panel will correct the motion.

The three exciter circuit selector switches are set to provide a fairly equal distribution of load between the exciters. The auxiliary motors and the lights are normally connected to the exciter adjacent to the generator which is driving the drilling motor, while the control and field circuits are connected to the other exciter. In an emergency one exciter can carry the entire load for a short period.

On the first controller point, the maximum generator current is about 40 percent of full load generator current, and the maximum motor torque obtainable is about 50 percent of the load motor torque. On points 2 to 16 inclusive, the maximum current and torque are increased by steps until on the 16th point the maximum current and torque obtainable are about twice full load values. Points 17 to 20 inclusive serve to increase the generator voltage and motor speed, but make little difference in the maximum or stalled motor torque.

The full load current ratings of the main electrical items are: 250-kilowatt generator, 1250 amperes; 200-kilowatt generator, 1000 amperes; drilling motors, 806 amperes; 300-horsepower mud pump motor, 1230 amperes.

The prime movers and accessories are of the heavy duty type and are large enough to handle the most difficult drilling assignments. Although requirements at Bruni do not necessitate the use of such heavy prime movers, the installation has proved an economical setup, pending the transfer to a deeper drilling district. The heavy power reserve works to advantage where several wells are to be drilled with one setting of the power plant. Use of a fairly light rig and drilling equipment has not affected the efficiency of a Diesel-electric outfit that might be transferred to the deepest drilling areas.

Two 350-horsepower Diesel drilling engine units, with nine-inch bore and 12-inch stroke and rated at 600 revolutions per minute, drive the generators. These engines are eight cylinder, weigh 29,600 pounds each and are equipped with 16 C.F.M., 250-pound air compressor starting units. The engine cooling equipment includes a portable steel tank unit with reservoir tank, tower, cooling section, surge tank and four-inch centrifugal pump for raw water service. The engine drive to the generators is by V-belt.

A heavy drilling reduction gear, suitable for twin direct current motors, is used. The gear ratio is 3.12 to 1 and the weight of the gear is 11,845 pounds.

One power driven, 7¾ x 18 slush pump weighing 35,476 pounds is used. The maximum working pressure of the fluid cylinder is 3000 pounds per square inch. The pump is a very heavy type and will perform satisfactorily under extreme conditions. Another pump will be added when the outfit is used for deeper drilling. The motor drive to the slush pump is by V-belt.

The derrick and rotary drilling equipment are suitable for drilling in the Bruni area but they are not the heavy type. Most of this equipment would have been considered a heavy type about 12 years ago, but now is used for drilling in the shallow producing districts. The principal equipment includes a 122-foot derrick; five-sheave crown block; 54-inch, four-sheave, traveling block; eight-inch hook; six-inch swivel; No. 10 rotary machine; unitized draw works, and one-inch drilling line.

Water is scarce in the district, a condition that makes the Diesels very adaptable. The engines consume only nine barrels of fuel oil per day. The oil used is a centrifuged field crude, which is considered a good grade of fuel for Diesel engines.

The power plant is placed on a lease to assure the drilling of at least four wells with one setting. Moving from one location to another involves only the transfer of the rig and drilling equipment and the swinging of the conduits to the new location. Theoretically, an entire lease or field could be developed with one setting of the power plant, but the distance of the well from the generating plant will determine the necessity for moving the unit. The voltage drop with a slight increase in distance between the power plant and drilling well is negligible. Where locations are located uniformly at 660-foot intervals, as is being done in the Bruni area, it is possible to place the power plant so that the distance to each of four wells is about the same.

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Gas Delivery Chart

THAT REQUIRES ONLY A RULER AND SHARP PENCIL TO USE

By C. J. BROWN,
Superintendent of Measurement,
Houston Pipe Line Company.

AN orifice meter delivery chart designed to facilitate the solution of various problems found in connection with the delivery of gas is to be described here. The outstanding feature of this chart, besides the variety of problems that may be solved, is the ease with which it can be used. It does not require the aid of handbooks, tables, slide rule, etc. A straight edge ruler, or triangle, and a fine pointed pencil are the only accessories necessary.

There are seven scales on the chart (see the following page).

Scale A

Scale A, which is a scale of multipliers to be used in connection with E and F, and H and G, may be used in finding the size of orifice plate necessary to obtain a given delivery at a given pressure under certain conditions. Any value on Scale F may be multiplied by any value on Scale A and the result read on Scale E at the intersection of a line drawn from the points representing the given values on Scales A and F. Likewise, any value on Scale E may be divided by any value on Scale A and the quotient read on Scale F.

Scale B

Scale B_1 is for use with L-10 or square root charts. A line drawn from the static reading on Scale B_1 to differential reading on Scale D_1 will intersect Scale C at the product of the two readings, or at the value of the extension. Scale B_2 is for use with charts giving static readings in pounds per square inch gauge, and inches of mercury vacuum. A line drawn from the gauge reading on Scale B_2 to differential reading Scale D_2, will intersect Scale C at the hourly extension value, $\sqrt{Ph}$.

Scale C

Scale C, the hourly extension scale, has been partially explained already. For the purposes of chart calculations the graduations of Scale C need not be shown, as the point of intersection, with line drawn from static to differential values, only is used. However, any value on Scale C may be multiplied by any value on Scale G and the product read on Scale F_1. Line drawn from the hourly extension point on Scale C to coefficient point on Scale G, will intersect Scale F_1 at hourly and Scale F_2 at daily delivery.

Scale D

Scale D_1 is for use with L-10 and square root chart readings. Its use in connection with Scale B_1 has been explained. This scale is for use with charts giving differential readings in inches of water.

Scale E

The values on Scale E_1 are products of values on Scale F_1 multiplied by multipliers on Scale A. Scale E_2 values are 24 times the values on Scale E_1 at same point, consequently are for daily purposes.

Scale F

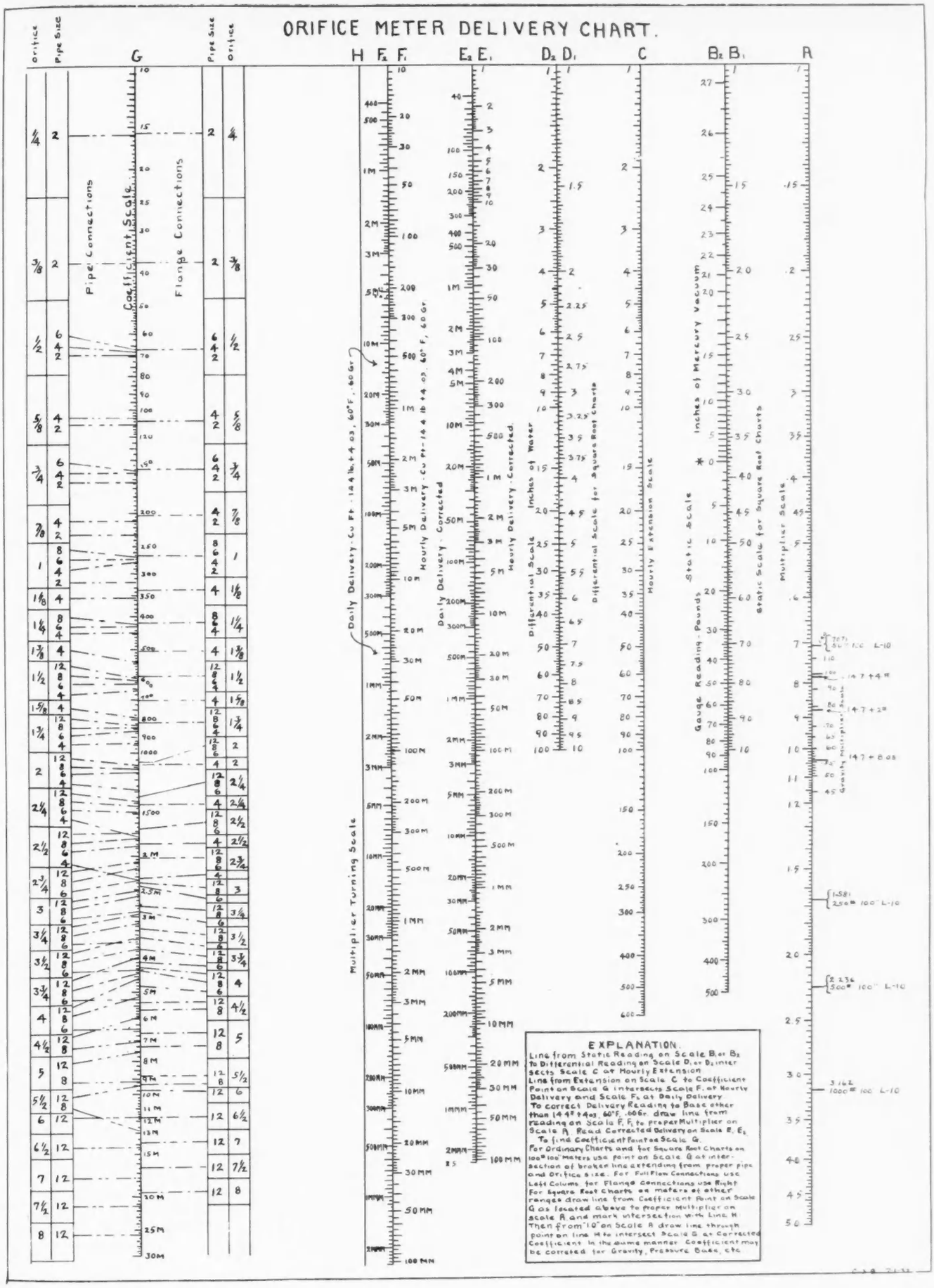
Values on Scale F_1 are products of values on Scale G by values on Scale C. These values indicate cubic feet per hour of gas of pressure base of 14.4 pounds plus 4 ounces, 60°F., .60 gravity, when used in connection with pipe and orifice size coefficient points, since the points are laid off for values of coefficients for above pressure base, temperature and gravity. However, if coefficient is known, results obtained on Scale F_1 will show volumes at same pressure base, temperature and gravity as of the coefficient that is used. Scale F_2 values are 24 times the values on Scale F_1.

Values obtained on Scale F_1 or F_2 may be corrected to any base by applying proper multiplier on Scale A and reading result on Scale E_1 and E_2.

Scale G

Except when values of coefficients are known, the graduations on Scale G are not necessary in calculating orifice meter delivery. Coefficient points are located on Scale G for values based on pressure base of 4 ounces plus 14.4 pounds, 60° F and .60 gravity. To find coefficient point for particular meter: if for 2½- and 8-inch diameter connections use column to left of Scale G and for flange connections use columns to the right, follow broken line from pipe and orifice size to Scale G to point for use in connection with extension on Scale C.

For coefficients of other pressure base, etc., or for L-10 charts, locate ordinary coefficient as above. Then draw line from point located above to proper multiplier point on Scale A. Through intersection of this line with Turning Scale H, draw line from point 1.0 on Scale A to intersect Scale G. This point will be coefficient to use in connection with extension point on Scale C. Line drawn from coefficient point on Scale G to hourly extension point on Scale C will intersect Scale F_1 at hourly delivery pressure.


ORIFICE METER DELIVERY CHART.
Orifice
Pipe Size
G
Coefficient Scale
Pipe Connections
Flange Connections
Pipe Size
Orifice
H F₂ F
E₂ E₁
D₂ D₁
C
B₂ B₁
A
Daily Delivery - Cu Ft - 14.4 lb + 4 oz, 60° F, 60 Gr
Hourly Delivery - Cu Ft - 14.4 lb + 4 oz, 60° F, 60 Gr
Daily Delivery - Corrected
Hourly Delivery - Corrected
Multiplier Turning Scale
Differential Scale
Inches of Water
Differential Scale for Square Root Charts
Hourly Extension Scale
Gauge Reading - Pounds
Static Scale
Inches of Mercury Vacuum
Static Scale for Square Root Charts
Multiplier Scale
Gravity Multiplier Scale
EXPLANATION.
Line from Static Reading on Scale B or B₂ to Differential Reading on Scale D or D₂ inter sects Scale C at Hourly Extension
Line from Extension on Scale C to Coefficient Point on Scale G intersects Scale F, at Hourly Delivery and Scale F₂ at Daily Delivery
To correct Delivery Reading to Base other than 14.4 lb + 4 oz, 60° F, 60 Gr. draw line from reading on Scale F, F₂ to proper Multiplier on Scale A. Read Corrected Delivery on Scale E, E₂
To find Coefficient Point on Scale G.
For Ordinary Charts and for Square Root Charts on 100 lb 100 inches of water use point on Scale G at intersection of broken line extending from proper pipe and Orifice size. For Full Flow Connections use Left Column. for Flange Connections use Right
For Square Root Charts on meters of other ranges draw line from Coefficient Point on Scale G as located above to proper multiplier on scale A and mark intersection with Line H. Then from "1.0" on Scale A draw line through point on line H to intersect Scale G at Corrected Coefficient. In the same manner Coefficient may be corrected for Gravity, Pressure Base, etc.

COMPARISON OF OUTPUT AND INTAKE

Characteristics of Natural Gas Wells

IN THE TEXAS PANHANDLE FIELD

By M. A. SCHELLHARDT,
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United States Bureau of Mines,
Petroleum Experiment Station, Bartlesville, Okla., and

E. L. RAWLINS, Senior Petroleum Engineer,
United States Bureau of Mines,
Petroleum Experiment Station, Bartlesville, Okla.

THIS is the third of a series of articles based on field tests in the Texas Panhandle natural gas field that have been made by the United States Bureau of Mines. The articles are reprinted from the U. S. Bureau of Mines Report of Investigations 3303.

PART III

Comparison of Output and Intake Characteristics

THE output and intake characteristics of the gas wells tested are shown graphically by plotting rates of gas delivery on logarithmic paper against corresponding values of pressure factors $P_f^2—P_s^2$ (output characteristic) and $P_s^2—P_f^2$ (intake characteristic).

Well A

The output and intake characteristics of Well A are compared in Figure 6. Line A represents the producing characteristic of the well obtained by plotting rates of gas delivery against corresponding values of pressure factor $P_f^2—P_s^2$. Line B represents the intake characteristic of the well obtained by plotting rates of gas delivery into the well against corresponding values of pressure factor $P_s^2—P_f^2$.

The slopes of lines A and B are approximately the same throughout the range of data. For the same values of pressure factors $P_f^2—P_s^2$ and $P_s^2—P_f^2$, the rate of gas delivery from the well is approximately 4 percent greater than the rate of gas delivery into the well. The behavior of the pressures and delivery rates following changes in the operating condition of Well A indicated that pressure and flow conditions in the well system were nearly stable after 1½ hours; therefore, the results of the tests represent approximately the stabilized outflow and inflow characteristics of the well.

Well B

The output and intake characteristics of Well B are shown graphically in Figure 7. Lines A and B represent the output and intake characteristics of the well. The plotted data under case I are based upon stabilization periods of approximately 1½ hours; under this condition the slopes of the lines representing the output and intake characteristics of the well are virtually the same throughout the range of data, and for equal values of the respective pressure factors the rate of gas delivery from the well is about 7 percent greater than the rate of delivery into the well.

The results of an inflow test based upon long periods of pressure and flow stabilization (test was begun September 6 and completed September 12) are shown under case II, Figure 7. The rate of gas delivery into Well B during this period ranged from 6,600,000 to 11,400,000 cubic feet per 24 hours. The plotted data based upon observations during the initial 24-hour period correspond closely with the data based upon the inflow test of August 29. As the delivery of gas into the well was continued, there was a general increase in the rate of gas flow for a definite value of the pressure factor. (Note posi-

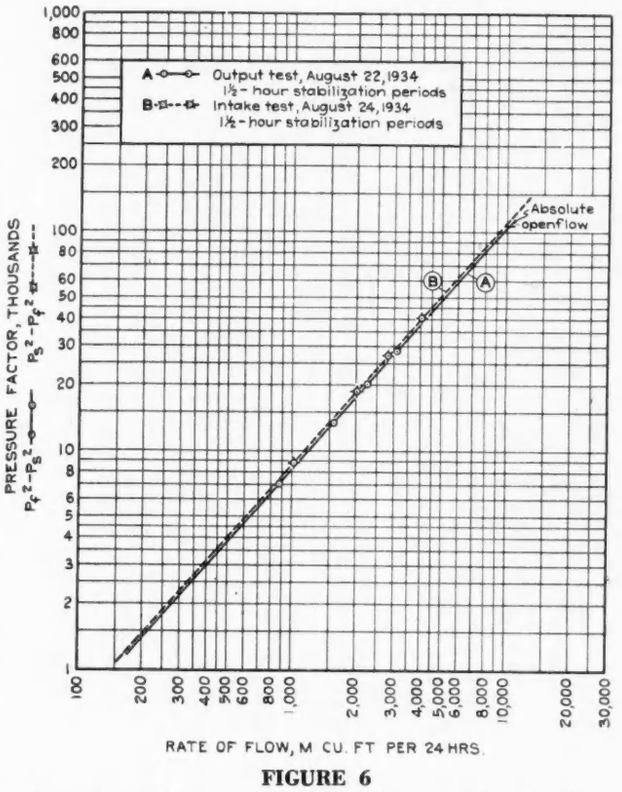
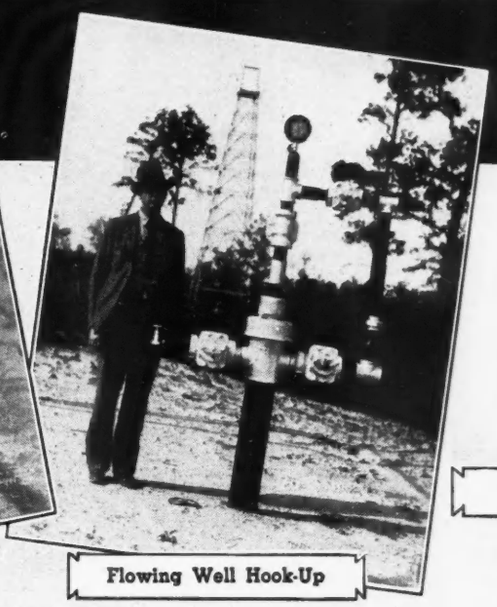


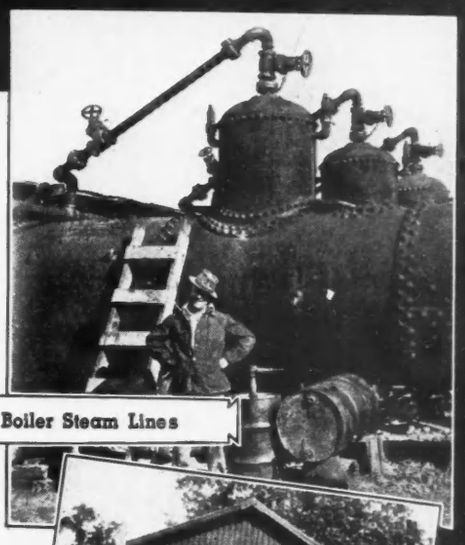
FIGURE 6
Comparison of output and intake characteristics of well A

TIME-TESTED

Pumping Well Hook-Up



Flowing Well Hook-Up



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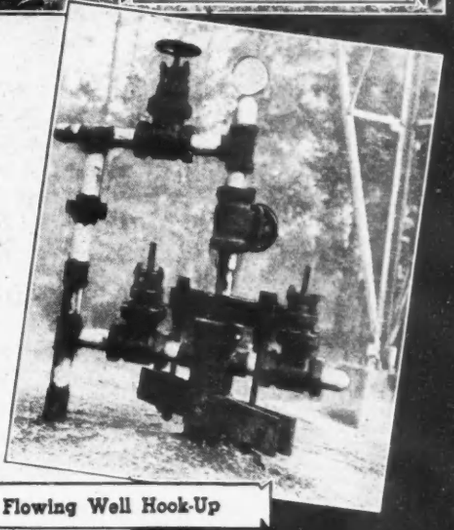

Flowing Well Hook-Up

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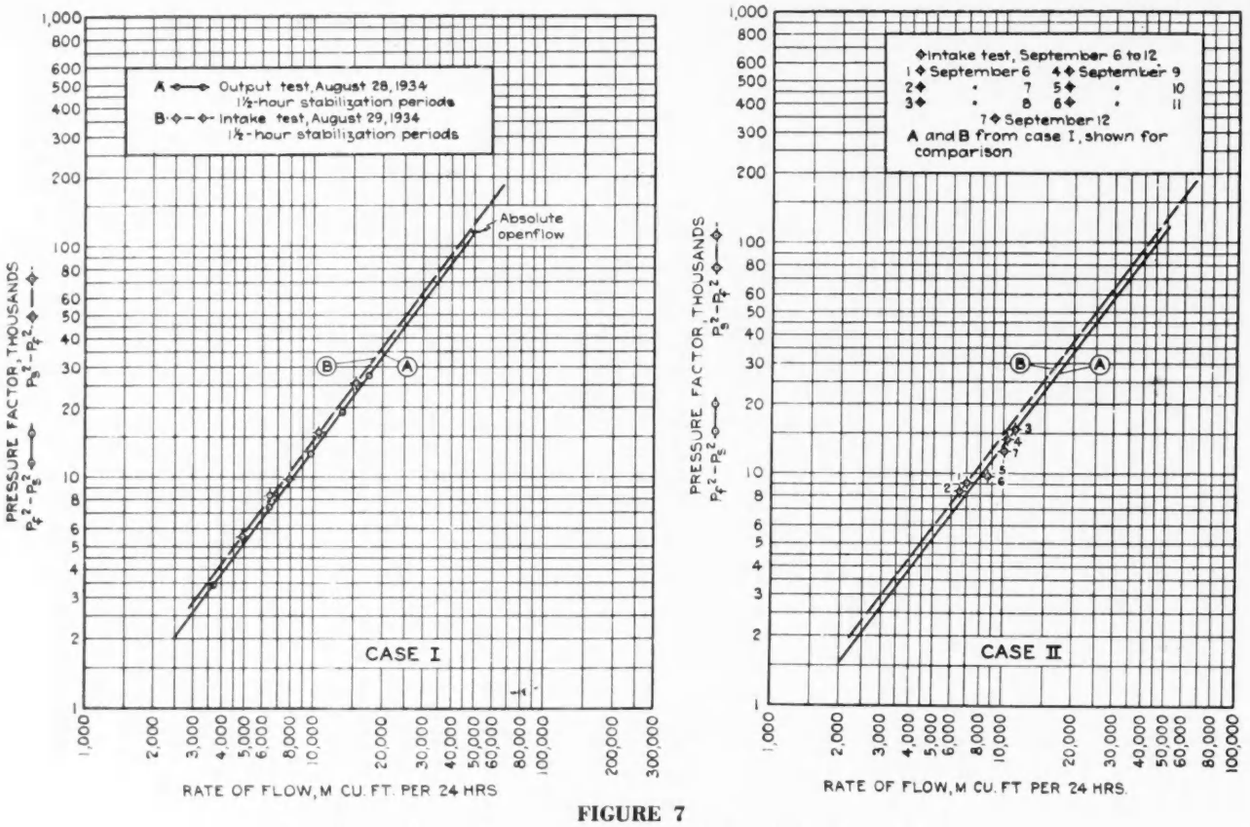

A ⟷ Output test, August 28, 1934
1½-hour stabilization periods
B ◇—◇ Intake test, August 29, 1934
1½-hour stabilization periods
Absolute openflow
CASE I
PRESSURE FACTOR, THOUSANDS
RATE OF FLOW, M CU. FT. PER 24 HRS.
◆Intake test, September 6 to 12
1 ◆ September 6
2 ◆
3 ◆
4 ◆ September 9
5 ◆
6 ◆
7 ◆ September 12
A and B from case I, shown for comparison
CASE II
PRESSURE FACTOR, THOUSANDS
RATE OF FLOW, M CU. FT. PER 24 HRS.

FIGURE 7

Comparison of output and intake characteristics of well B

tions of consecutive points 1 to 7 inclusive, case II, with respect to line B).

Well C

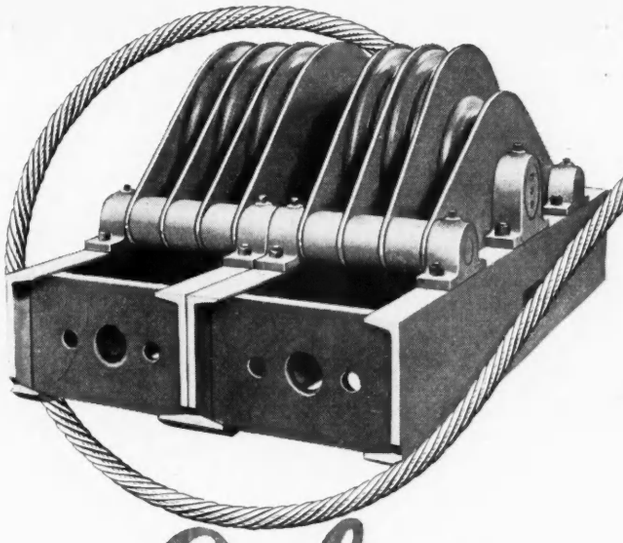
Well C was characterized by very slow stabilization of pressure and flow conditions. Line A, case I, Figure 8, was determined from data observed after stabilization periods of 1½ hours during the inflow test made September 4. The pressure factor is based upon a formation pressure of 290 pounds per square inch absolute calculated from the shut-in pressure of 260 pounds per square inch gage at the wellhead observed before the test. Line B, case I, represents the intake characteristic of the well and is based upon operating pressures observed after stabilization periods of approximately 1½ hours; this test was made September 28. The relationship represented by graph B is based upon pressure-factor values calculated from the shut-in pressure of 268 pounds per square inch gage observed on the wellhead September 28 just before the inflow test was started. Lines A and B, case I, have approximately equal slopes and show that for the same values of pressure factors $P_f^2—P_s^2$ and $P_s^2—P_f^2$ the rate of gas delivery from the well is about 6.5 percent greater than the rate of delivery into the well.

Data determined from observations made 6 and 8 days after outflow and inflow tests were begun September 29 and 4, respectively, are plotted under case II, Figure 8. As the operating condition of the well was changed by external influence during the stabilization periods of both the outflow and inflow conditions of operation, the degree of stabilization of pressure and flow conditions is not exactly the same for the two tests, even though the lapsed time in each of the tests is the same. Although the outflow and inflow data are not exactly comparable because of the probable discrepancy in stabilization, there is a marked similarity in the reduced rates of gas delivery from the well and gas delivery into the well as the operations were continued. For example, the plotted data show that after outflow periods of 6 and 8 days, respectively, the rates of delivery from the well were only about 51 and 44 percent of the delivery rates at equal values of the pressure factor after stabilization periods of 1½ hours. Similarly, it is shown that the rates of gas delivery into the well after 6- and 8-day periods, respectively, were only about 53 and 46 percent of the rates of delivery into the well at equal values of the pressure factor in the test employing stabilization periods of 1½ hours.

Well D

The output and intake characteristics of Well D, based upon stabilization periods of approximately 1½ hours, are represented by lines A and B, respectively, case I, Figure 9. The slope of the pressure-flow relationship plotted from the results of the inflow test, line B, is approximately equal to that of the pressure-flow relationship plotted from the results of the outflow test, line A. Comparison of the pressure-flow relationships represented by lines A and B, case I, shows that the rate of gas delivery from the well is about 6 percent greater than the rate of delivery into the well for the same values of the respective pressure factors.

The data plotted under case II, Figure 9, were obtained under stabilized conditions of pressure and flow. Line B′, representing the stabilized intake characteristic of the well, is based upon the results determined under the two delivery rates shown. Outflow data were obtained on the well from only one



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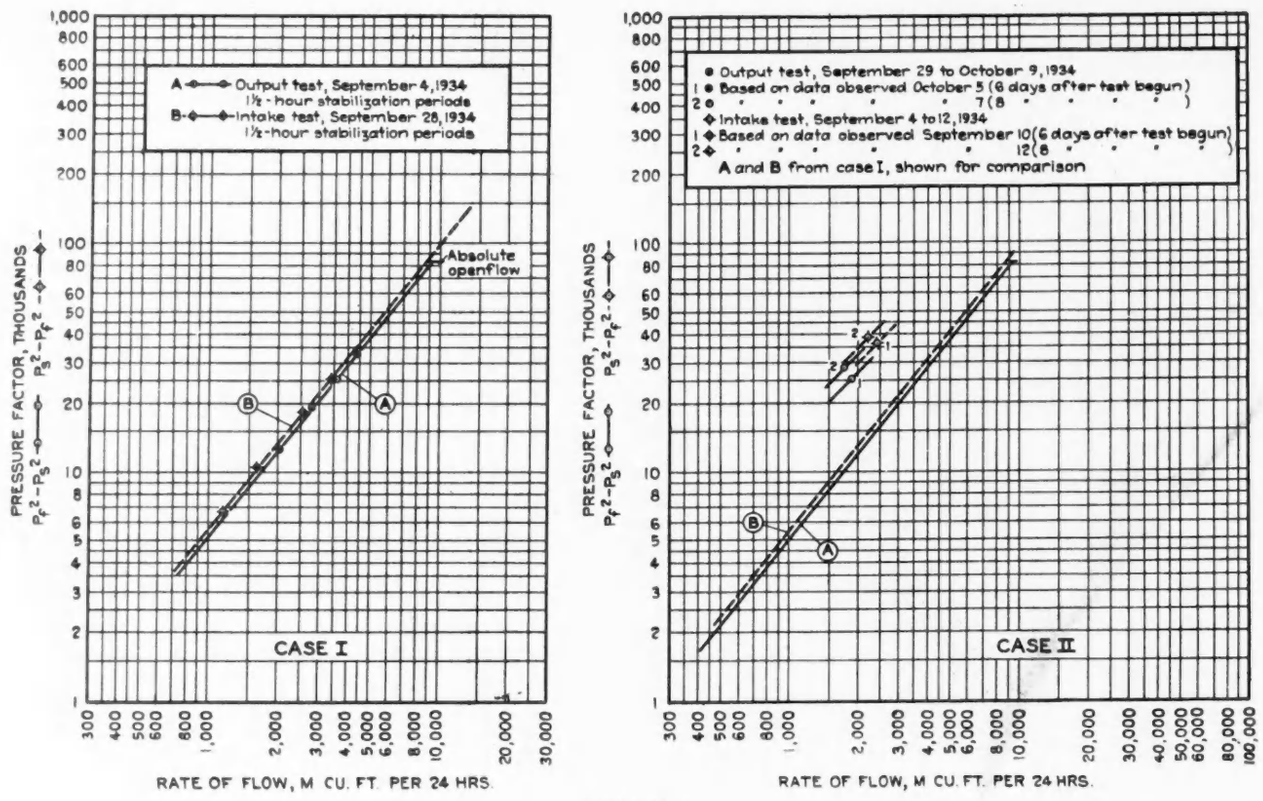
A—Output test, September 4, 1934
1½-hour stabilization periods
B—Intake test, September 28, 1934
1½-hour stabilization periods
Absolute openflow
CASE I
PRESSURE FACTOR, THOUSANDS
RATE OF FLOW, M CU. FT. PER 24 HRS.
Output test, September 29 to October 9, 1934
Based on data observed October 5 (6 days after test begun)
7 (8 " " " " ")
Intake test, September 4 to 12, 1934
Based on data observed September 10 (6 days after test begun)
12 (8 " " " " ")
A and B from case I, shown for comparison
CASE II
PRESSURE FACTOR, THOUSANDS
RATE OF FLOW, M CU. FT. PER 24 HRS.

FIGURE 8
Comparison of output and intake characteristics of well C

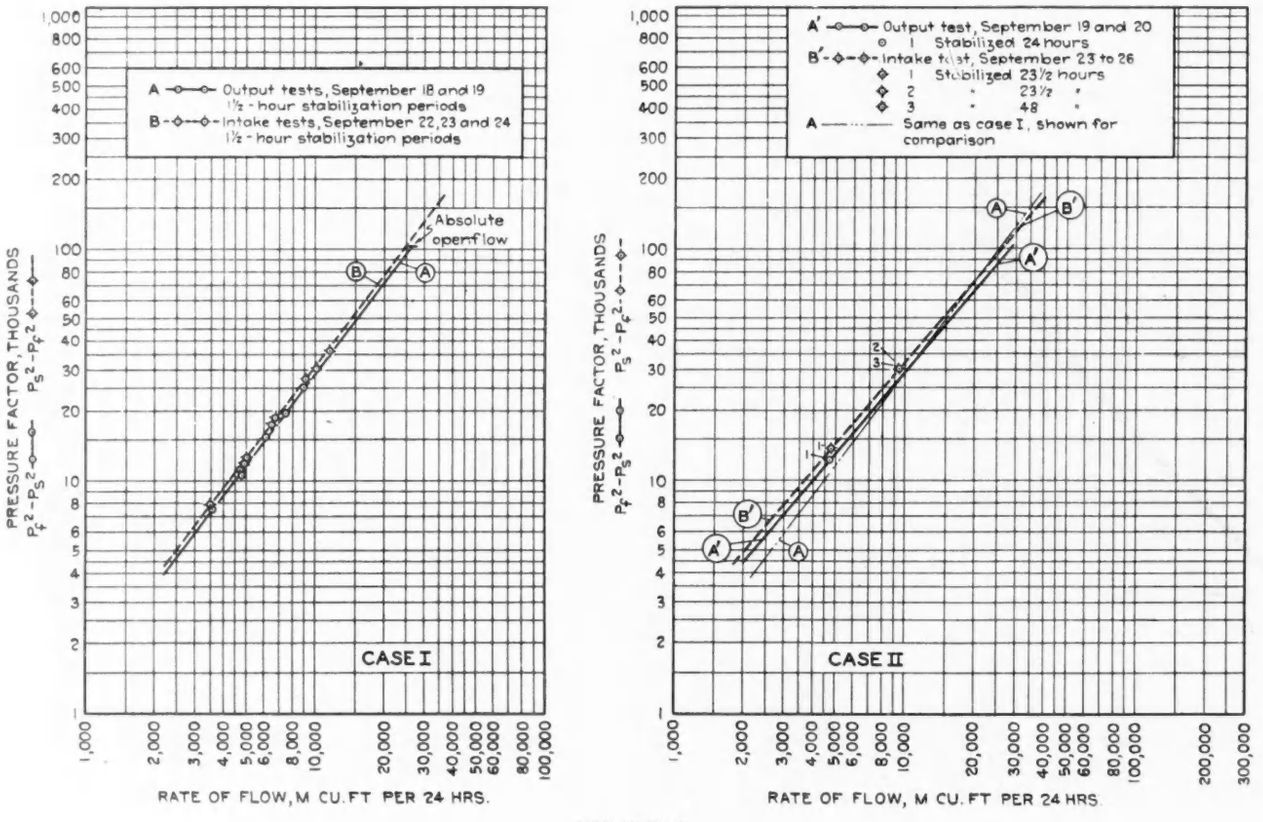
A—Output tests, September 18 and 19
1½-hour stabilization periods
B—Intake tests, September 22, 23 and 24
1½-hour stabilization periods
Absolute openflow
CASE I
PRESSURE FACTOR, THOUSANDS
RATE OF FLOW, M CU. FT. PER 24 HRS.
A'—Output test, September 19 and 20
1 Stabilized 24 hours
B'—Intake test, September 23 to 26
1 Stabilized 23½ hours
2 " 23½ "
3 " 48 "
A—Same as case I, shown for comparison
CASE II
PRESSURE FACTOR, THOUSANDS
RATE OF FLOW, M CU. FT. PER 24 HRS.

FIGURE 9
Comparison of output and intake characteristics of well D

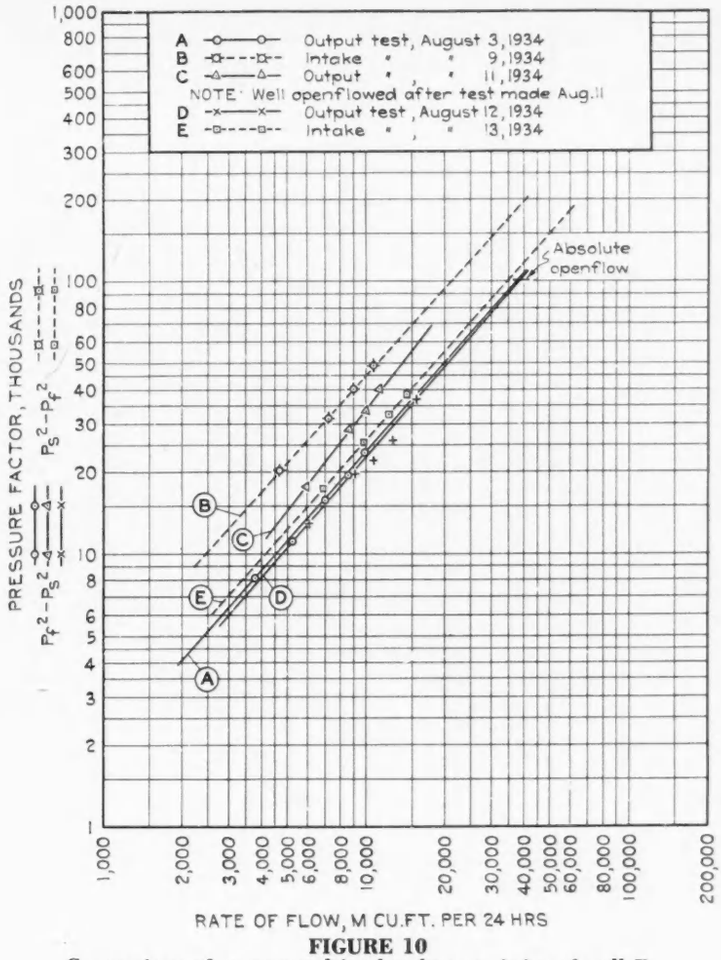
A Output test, August 3, 1934
B Intake " " 9, 1934
C Output " " 11, 1934
NOTE: Well openflowed after test made Aug. 11
D Output test, August 12, 1934
E Intake " " 13, 1934
Absolute openflow
PRESSURE FACTOR, THOUSANDS
RATE OF FLOW, M CU.FT. PER 24 HRS

FIGURE 10
Comparison of output and intake characteristics of well E

stabilized delivery rate; line A′ was established by assuming that the slope of the line representing the outflow characteristic of the well was equal to that for the inflow characteristic represented by line B′. The rates of outflow indicated by line A′ are about 7.5 percent greater than the rates of inflow shown by line B′, at equal values of the respective pressure factors. Comparison of the slope of the stabilized inflow pressure-flow relationship, line B′, case II (Figure 9), with the slope of line B, case I, which was determined from data obtained after stabilization periods of 1½ hours, shows that when the sequence in which the inflow data were obtained was such that the rate of delivery was increased in the series of operating conditions observed, tangent n of the angle between the pressure-factor (vertical) axis and the line representing the pressure-flow relationship increased as the pressure and flow became more nearly stabilized. This observation coincides with behavior noted during the study of the effect of stabilization on the producing characterictics of natural-gas wells.[1]

Well E

Comparison of the results of the outflow and inflow tests on Well E—lines A and B, respectively. Figure 10—indicates that the rate of gas delivery into the well was much less than the rate of delivery from the well. This difference might have been due to sealing of the face of the gas-producing sand by foreign materials, such as pipe scale, dust, or cavings, and to decreased permeability of the gas-producing formation caused by the infiltration of such materials into its pores when gas was being delivered into the sand. The relation of line C, which is based upon data obtained during the second outflow test, August 11, to lines A and B, illustrates the partial restoration of the delivery capacity of the well. Line D was determined from data obtained during the outflow test made August 12 after the well had been open-flowed; although the data for this test were somewhat erratic, the producing characteristic of the well as represented by line D shows a slightly increased delivery capacity compared with its producing characteristic represented by line *A*. Line *E* was determined from data obtained during the inflow test made on Well E August 13. Comparison of D and E shows that there is relatively little difference between the slopes of the lines representing the outflow and inflow characteristics of the well and that throughout the range of data the rate of delivery of gas from the well was approximately 14 percent greater than the rate of delivery into the well for the same values of the respective pressure factors.

Well F

Line A, Figure 11, is based upon the results of the outflow test made on well F August 15 and line B, upon data obtained during the inflow test made on the well August 16 and 17. Comparison of these lines shows an apparent difference in slopes; however, this difference is within the limits of the accuracy of the data generally obtained.

Summary of Results

The results of the study of the output and intake characteristics of the natural-gas wells described in this report are summarized as follows:

1. The relationship established by plotting on logarithmic paper rates of gas delivery into the wells (Q) against corresponding values of the pressures at the face of the sand squared minus the formation pressure squared ($P_s^2—P_f^2$) can be represented approximately by a straight line and mathematically by the equation.

$$Q = C\ (P_s^2—P_f^2)^n,$$

where Q = rate of gas delivery into the well, cubic feet per 24 hours;

C = coefficient, determined by experiment;

P_s = pressure imposed at face of sand, pounds per square inch absolute;

P_f = shut-in pressure at the sand face, pounds per square inch absolute:

and

n = exponent, determined experimentally.

For the purpose of this report this relationship has been termed the "intake characteristic" of a gas well.

2. The intake characteristic of a gas well was determined in a manner similar to that originated in previous studies of output or producing characteristics of gas wells, where the pressure-flow relation-

[1]Rawlins, E. L., and Schellhardt, M. A., Back-Pressure Data on Natural-Gas Wells and Their Application to Production Practices: Monograph 7, Bureau of Mines (in coop. with Am. Gas Asso.). 1936, 210 pp.

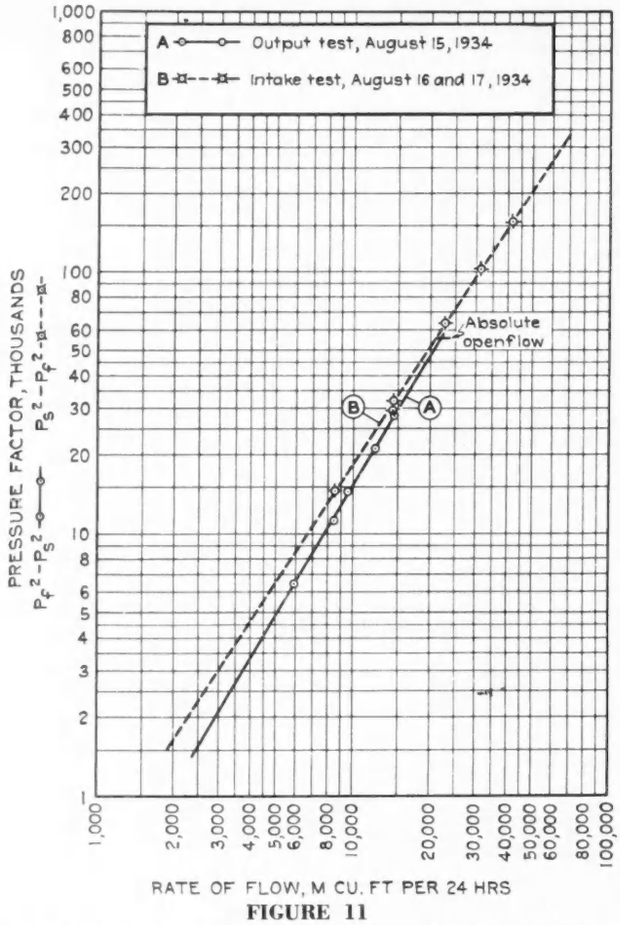
A Output test, August 15, 1934
B Intake test, August 16 and 17, 1934
Absolute openflow
PRESSURE FACTOR, THOUSANDS
RATE OF FLOW, M CU. FT PER 24 HRS

FIGURE 11
Comparison of output and intake characteristics of well F

ship is established by plotting on logarithmic paper rates of gas delivery from a well against corresponding values of the formation pressure squared minus the back pressure at the face of the sand squared ($P_f^2—P_s^2$). This relationship is represented by a straight line and is expressed mathematically by the equation.

$$Q = C\ (P_f^2—P_s^2)^n.$$

3. To compare the output and intake characteristics of the natural-gas wells described in this report both output and intake tests were made of each of the wells under similar conditions of pressure and flow stabilization, and rates of gas delivery from or into the well were plotted on logarithmic paper against the corresponding pressure factors $P_f^2—P_s^2$ or $P_s^2—P_f^2$ to determine the respective pressure-flow relationships (straight lines).

4. The slopes of the straight lines established by plotting rates of gas delivery from the respective wells against corresponding values of pressure factor $P_f^2—P_s^2$ generally were approximately the same as the slopes of the straight lines established by plotting the rates of gas delivery into the wells against corresponding values of pressure factor $P_s^2—P_f^2$.

5. The relation of the output delivery rate to the intake delivery rate under similar conditions of pressure and flow stabilization and at the same values of the respective pressure factors was such that rates of gas production from the wells generally were 4 to 7½ percent greater than the rates at which gas was delivered into the respective wells.

6. Results of the outflow and inflow tests made on some of the wells show that coefficient C of the equation for the delivery of gas into gas wells, $Q = C\ (P_s^2—P_f^2)$, will be subject to changes similar to those for coefficient C of the equation for flow from gas wells, $Q = C\ (P_f^2—P_s^2)^n$. It is probable that liquids and foreign materials such as pipe scale and rock substances carried in the flow from source wells and from pipe-line facilities will affect the efficiency of operations seriously where gas is being delivered into a formation if these materials are permitted to enter the bore of an intake well.

7. Establishment of a pressure-flow relationship for the intake characteristic of a natural-gas well based upon the rate of gas delivery, Q, into the well and pressure factor $P_s^2—P_f^2$ permits calculation of delivery rates that can be expected for different differential pressures $P_s—P_f$ through the formation into which gas is delivered, provided the shut-in formation pressure P_f is known.

8. Although the rates of delivery from and into a gas well at the same values of pressure factors $P_f^2—P_s^2$ and $P_s^2—P_f^2$ may be approximately the same, the delivery rates from and into a gas well at the same values of the differential pressure $P_f—P_s$ and $P_s—P_f$ are different. Table 1 from the data obtained on Wells A and B in this report compares rates of gas flow from and into wells under equivalent values of the differential pressure.

TABLE 1

Differential Pressure, $P_f—P_s$ or $P_s—P_f$, Pounds per Square Inch	WELL A[1]			WELL B[2]		
	Rate of Gas Delivery, M Cu. Ft. per 24 Hours		Delivery into Well in percentage of Delivery from well	Rate of Gas Delivery, M Cu. Ft. per 24 Hours		Delivery into Well in percentage of Delivery from well
	From Well	Into Well		From Well	Into Well	
5	440	420	95.5	3,700	3,400	91.9
10	825	790	95.8	6,180	5,750	93.0
20	1,490	1,490	100.0	10,150	9,950	98.0
30	2,110	2,180	103.3	13,650	13,500	98.9
40	2,700	2,880	106.7	16,800	16,800	100.0
50	3,270	3,580	109.5	19,500	20,100	103.1
60	3,800	4,270	112.4	22,050	23,400	106.1
70	4,300	4,970	115.6	24,450	26,500	108.4
80	4,790	5,690	118.8	26,650	29,500	110.7
90	5,250	6,400	121.9	28,800	32,400	112.5
100	5,660	7,120	125.8	30,850	35,100	113.8

[1]Shut-in formation pressure, 330 pounds per square inch absolute. Delivery into well approximately 96 percent of delivery from well at equal values of pressure factors $P_s^2—P_f^2$ and $P_f^2—P_s^2$.

[2]Shut-in formation pressure, 341 pounds per square inch absolute. Delivery into well approximately 93 percent of delivery from well at equal values of pressure factors.

9. Results of the outflow and inflow tests conducted on the six gas wells in the Texas Panhandle field show a definite relationship throughout an appreciable range of operation between the output and intake characteristics of the relatively dry natural-gas wells in the Panhandle field from which the data were obtained; it is believed that intake characteristics calculated from the producing characteristics of natural-gas wells in this field will be accurate enough for projects where this information is needed.

10. Although the relationship of output and intake capacities of gas wells was shown to be relatively independent of the stabilization characteristics of the wells, the results of the tests of Well C emphasize the necessity for very thorough study of the producing characteristics of wells in order that input characteristics determined therefrom may be accurate.

Preparation of Wells For Acid Treatment

By BENSON M. KINGSTON

THE first requirement in the preparation of wells for acid treatment is that the well must be clean. This is an ironclad rule. While it must be applied particularly to the open hole and the producing formation, it should be applied as well to the casing and tubing.

With wells of natural high pressure, it is, of course, a simple matter to allow them to clean themselves. New wells of the low pressure type should be washed with clear water repeatedly until all the drilling mud is removed from the sides of the hole. Old low pressure wells should undergo this same process to remove accumulated sludge. It is well worth the effort and expense in most cases. In old wells and even small flowing wells, as much paraffin and sediment should be removed as possible.

The hole should be free of fluid. In low pressure new wells, all the fluid possible, especially drilling water, should be removed from the hole before treating through the casing. Old pumping wells should be pumped down before treatment through the casing. With tubing treatment, it is necessary to remove only the water, because of its possible dilution effect on the acid. In casing treatments, all the fluid should be removed; not only because of the diluting effect of the water, but because it has a tendency to slow down treatment considerably and to raise the treatment pressure.

Casing strings should be set close to the producing formation. It is always the best policy when drilling a well with treatment in mind, to set the oil string of casing just above the producing formation. In wells where there is much open hole other than the limestone producing formation—and especially if there is much shale—it is wise to set a liner. This is necessary for the acid may have a tendency to cause the hole to cave, making the latter part of the treatment difficult.

Good equipment should be used. In drilling shallow wells in a "lime" territory, where it is necessary to treat wells to make them produce, numerous operators have used, to their sorrow, junk casing which would not stand the pump pressures necessary for treatment. In all wells, whether shallow or deep, it is wisest to use good casing. If second-hand casing is used, it should be made to stand a 1000-pound cold water test before it is placed in the hole. The same is true of tubing. All the casing should be made up tightly, including the top nipple, and the threads well cleaned and "doped." Of course, in high-pressure areas all this is observed as a routine procedure, but in low-pressure areas, operators often consider first class material a waste of money. It will, however, be a saving in the long run, as many wells have been lost or damaged badly because of poor equipment. No acid, even well inhibited, will fail to dissolve rust. Often apparently good second-hand pipe will be rusted through in spots which acid will find and go through, especially if it is under pressure.

THE accompanying article is one of the chapters presented in the very recently publsihed book "Acidizing Hand Book." Fourteen chapters in the book cover practically all questions that may arise when acid treating oil wells. Preparation of wells for acid treatment is an important part in the successful application of this method for increasing production recovery.

The best possible protection that a casing seat may have is for the casing to be cemented. It takes very little pressure to circulate a string of casing that is not cemented. "If a well is worth treating, it is worth cementing," is an argument of treaters that is worth while. According to laboratory tests, it takes five times as long for acid to dissolve ordinary cement, when set, as it does to dissolve 80 percent limestone. Cement is hardly ever more than 60 percent soluble in acid. Bearing this in mind, as well as that a very small amount of the cement is exposed to the acid as compared to amount of limestone in the hole, it may be seen readily that the chances are that the acid will penetrate very far through the cement.

The only type of well that it is useless to cement is the old, low-pressure type, where the producing formation has been depleted extensively. In so far as treatment is concerned—250 feet of cement behind the casing is usually sufficient. At least 15 feet of cement should be left inside the pipe. Fifty sacks of cement is the most logical amount, in most cases, to achieve this purpose.

Table 1 shows the figures for 50 sacks of cement in various size holes and casing.

The argillaceous clay material in cement forms a gelatinous covering for the soluble portion when it is exposed to acid, thereby slowing and even stopping the reaction.

It is often advisable to use small, or "bumper," shots of nitro-glycerine or other explosives before treating hard compact formations. This will open cracks and crevices to give the acid a larger area on which to start working. Small shots, well-tamped, are usually as useful as large ones for this purpose. The size of the shot should depend largely upon the thickness of the formation. However, from 30 to 50 quarts are usually enough.

If shooting is contemplated, it should be done before the casing is cemented. All the means taken to protect casing should be observed because badly jarred casing is difficult to make hold pressure during the treatment process.

LOMA NOVIA CONDITIONS REQUIRE EXACTING CEMENT OPERATIONS TO

Cut Off Upper Water

By EARL S. POST, Staff Writer

REVISED cementing methods have become necessary to adequately cut off upper water in the Loma Novia and Hoffman districts of Duval County. The shallow sands, ranging from 2550 to 2900 feet, prove to be unusually difficult propositions when attempts are made to cement off the flow of water above the casing seat. The basis of the entire trouble is that a sand containing salt water at nearly the same head as is found in the oil sand, is encountered a short distance above the producing horizon and is separated from this zone by a relatively thin shale stratum, in some instances being only 6 feet in thickness. The nature of this shale break itself is probably responsible for the majority of the difficulty, that is, the shale is brittle and subject to caving, apparently sluffing off into the hole while circulating. While this shale cannot be classified as heaving shale, it does have somewhat similar characteristics, in that circulation through it will continue to bring out shale even though drilling has ceased at that point.

General practice in the Loma Novia field among most operators is to drill a 9⅞-inch hole to land 7-inch casing through the shale break at the top of the producing horizon. Casing is cemented with 200 sacks of cement. After drilling out the cement plug and running liner these wells are brought in by swabbing and, on commencing to flow, in many cases salt water breaks in at once.

In several instances drill-stem tests with the packer set in the shale break have proved the oil zone to be free of water; yet after casing and completing, salt water has appeared in large quantities with the initial oil production. This apparently proves that the source of the water is the sand above the casing shoe.

After water has appeared in the wells, the common practice is to pull the liner and squeeze cement at the casing shoe. As the formations are quite porous, they take fluid and cement slurry very easily. In most cases 50 sacks of cement are pumped in, though as high as 150 sacks have been successfully used with the required pressure not exceeding 1500 pounds per square inch. While the majority of the operators in the areas plug back across the face of the oil-producing sand to a point about 3 feet below the casing shoe before attempting the squeeze job, this has been proved unnecessary as equally good results are to be had by merely performing the squeeze job without first plugging back the hole. This practice will in no way injure the oil zone, the cement slurry seeking the source of the water when under pressure. Occasionally more than one squeeze is required to completely shut off the water; however, where sufficient cement is used on the first attempt, good results are usually obtained.

Explanation of these difficulties in obtaining complete water shut-off on the casing are not readily forthcoming; however, it is logical to believe that the brittle, crumbly shale between the oil zone and the water-bearing sand above is of such a nature that it does not afford good sand for the cement slurry around the casing and, on swabbing to complete, further crumbling of the shale takes place which in turn exposes the water sand. This is partially borne out by the fact that in most instances the water makes its appearance with the initial production of the well or failing to do so, does not show up until a much later period in the life of the well, at which time it is logical to assume that it is not upper water, but bottom water from the oil zone itself. Also, it seems that during cementing the shale continually washes away into the rising slurry.

Numerous practices have been tried in efforts to combat this initial water trouble. At first thought, it seems that underreaming at the shale break and through the water zone to enlarge or bottle neck the hole at that point would be a logical solution; on the contrary this practice seems to increase the trouble, apparently disturbing the shale section so much that increased caving occurs. Certain operators have adopted the practice of setting casing entirely through the oil sand and perforating to obtain production. Attaching a spiral cement guide to the lower two or three joints of the casing has given good results in the few cases where this has been tried. Arranging the casing head to apply back pressure on the outside of the casing while cementing, either by setting the casing on a braden head or closing a blowout preventer on the casing and closing off the returns completely during the time when the last of the cement is leaving the casing, thus building up several hundred pounds back pressure on the cement and forcing the fluid back of the casing to find its way into the porous formations in the hole, has been successful in every instance where it has been tried. Admixture of from one to three percent of bentonite to the cement when mixing has proven beneficial in several instances.

In summary The appearance of water with the initial production is fairly definitely established as coming from the water sand above the oil zone. Elimination of this difficulty when casing is being cemented can be obtained. To attain this end, the mud in the hole should be put in the best possible condition before cementing

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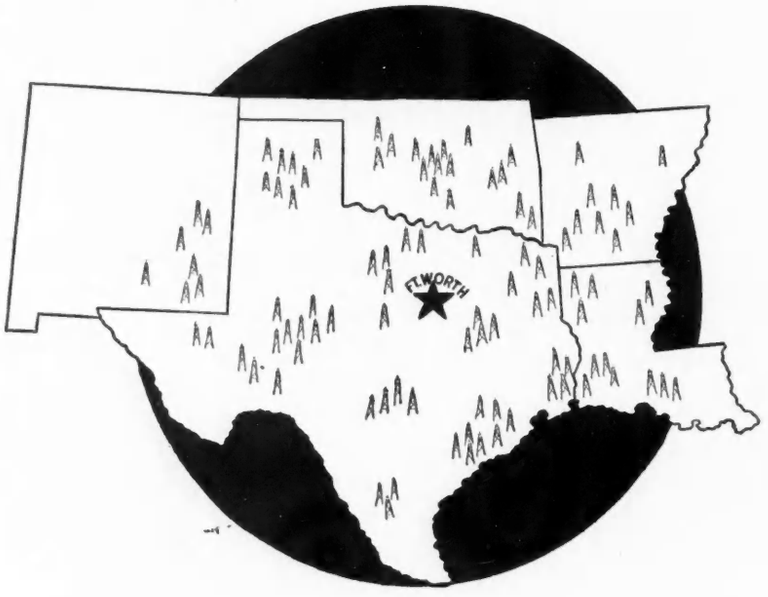

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Markets Steady

PRICES MOSTLY UNCHANGED FROM LEVELS OF WEEK AGO

PRICES in the oil industry have not changed materially within the past week, and the prospects continue fairly encouraging. Gasoline consumption has been holding at the unusually high levels of recent weeks, and late last week there had occurred a lessening of the price shading that previously had prevailed to some extent.

The kerosene market has continued listless, and there has been some shading of prices, but kerosenes have not had a strong market for some time. Fuel oils have continued to be favored with steady prices, despite hesitancy of some prospective buyers to pay the prevailing quotations. Although actual purchases have been light, there have been numerous inquiries from the standpoint of buying for storage.

Crude Market Steady

The crude oil markets have continued firm, although they possibly will show some weakening after the August allowables of the leading states become effective. It is indicated that Oklahoma and Kansas in August will produce the full allocations of the Bureau of Mines, whereas both states underproduced in June and July. However, the new state allowables at least will be in close conformity with the federal allocations. Similarly, Texas will stick close to the Bureau of Mines recommendation. New Mexico may be expected to stay fairly well in line with the federal schedule, also; and Louisiana and California presumably will not overproduce their federal quotas as much if any more in August than in recent months.

It appears, therefore, that the country's crude production will be rather effectively controlled during August. Although the national excess above the federal recommendation likely will be higher in August than in July, it possibly will not be great enough to seriously retard the markets.

There has been some further success in reducing gasoline stocks. During the week ended July 25, according to the American Petroleum Institute, the nation's stocks of finished and unfinished gasoline were reduced 315,000 barrels, or to 65,819,000 barrels. The inventories are substantially higher than at this time last year, but that fact is partially justified by the fact gasoline consumption also is materially greater.

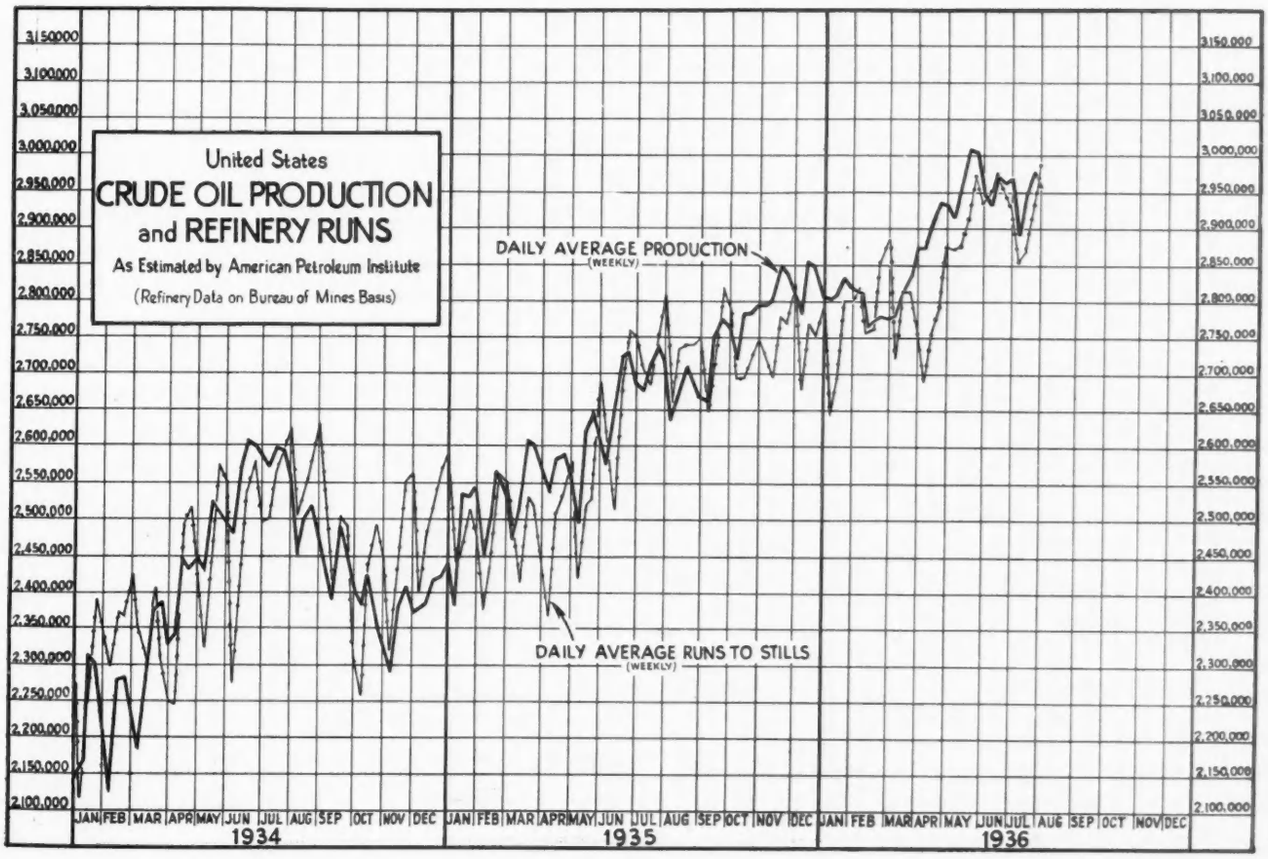
Mid-Continent Prices

Prevailing prices late last week on U. S. motor gasoline f. o. b. Oklahoma refineries were as follows, having been unchanged from a week before: 62 octane and below 4⅞ to 5 cents a gallon; 63 to 67 octane 5⅜ to 5⅝ cents; and 68 to 70 octane, 6 to 6⅛ cents.

In the Chicago market the corresponding prices were: 4¾ to 5 cents, 5 to 5½ cents, and 5⅝ to 6 cents.

In East Texas fully tendered third grade gasoline, 62 octane and below, continued at 4¾ cents a gallon, although the usual price concessions applied on intra-state shipments by rail or truck, in absence of federal tenders.

Kerosene prices, unchanged from a week earlier, continued the same in Oklahoma and Chicago markets. The 41-43 water white grade was priced at 3¼ to 3½ cents, and the 42-44 water white grade at 3½ to 3¾ cents.



BUILD FUEL STOCKS

Mid-Continent refinery prices holding steady

A CHANGE in the attitude of crude oil buyers was evident when time came to write state orders of proration in the Mid-Continent area for August. Producers called for the full Bureau of Mines allocations of 575,500 barrels daily in Oklahoma and 166,500 barrels daily in Kansas. No public objection was made by purchasers.

A month previously purchasers were in part responsible for the order by which proration was set below the recommendations of the United States Bureau of Mines for both states. Apparently crude buyers are of the conviction that for one month at least they will be able to absorb 40,000 barrels of additional oil daily.

Last week was one of unchanged prices in Group 3 territory. No weakening was apparent for crude oil. Gasoline quotations held steady. Only natural gasoline shoved ahead.

Apparently there is a deliberate attempt to put furnace oils in storage against the winter. Cold weather in the early spring of 1935 caught refiners with inadequate supplies. They were forced to step up refinery runs to get the material and the consequence was an accumulation of motor fuels. Now that motor fuel stocks have been reduced, refiners are attempting to anticipate a healthy market for furnace distillates.

Talco, Texas.—N. S. Locke, former operator of a group of refineries in the Gladewater section of the East Texas field, has started construction work on a small skimming plant on the southeast edge of Talco. Due to inferior quality of the 24 gravity crude produced in the Talco field prospective plant builders have heretofore passed up opportunities to buy the oil.

East Texas Tank Car Shipments

Week Ending July 26, 1936

PRODUCTS	No. Cars	Estimated Gallons
Gasoline	729	5,941,697
Fuel Oil	312	2,827,623
Casinghead Gasoline	111	956,734
Distillate	57	451,768
Kerosene	23	175,158
Naphtha	16	131,906
Gas Oil	16	129,592
Topped Crude	11	89,244
Residuum	9	76,860
Total	1,284	10,780,582
Total Previous Week	1,361	11,492,905
Intrastate	435	.....
Coastwise	433	.....
Interstate	416	.....
Total	1,284	.....

FELL'S OBSERVATIONS

I. P. A. executive visits in many oil areas

Tulsa.—H. B. Fell, executive vice president of the Independent Petroleum Association of America, who recently completed a trip through the oil fields east of California, summed up his tour and impressions in the following statement:

"During the two weeks of this month (July) I have enjoyed the opportunity of attending meetings of oil men in Colorado, Wyoming, Montana, Pennsylvania and Michigan. Some operators from New York were in attendance at one of the Pennsylvania meetings. Earlier in the year I have attended meetings in many oil centers in most of the other oil producing areas.

"This has made it possible for me, in talking with these oil men from all over the United States, to get a rather general idea of their point of view with respect to some of the problems of the industry.

"I have been greatly impressed with the fact that it now seems to be generally recognized that there must be a balance of supply with demand if there is to be any conservation of our natural petroleum resources or stabilization of the petroleum industry.

"Oil men everywhere seem to agree that production must be curtailed in flush wells so as to make the most efficient use of reservoir energy and prevent underground waste and that oil should not be produced in excess of consumptive demand and stored above ground, thus creating waste above ground.

"There appears to be a rather general agreement that stocks of gasoline must be drastically reduced before fall and that the industry should be careful not to produce so much oil that this reduction cannot be accomplished.

"Everywhere I go I find that the domestic producers are perturbed over the import situation. There is a great unanimity of opinion that with the existing strict legal curtailment of domestic production that the importers should contribute their part to the general program by decreasing their imports to some fixed amount and keep them there."

PHILLIPS BUYS

Amarillo, Texas.—Phillips Petroleum Company has strengthened its position as a producer of oil and gas in the Sunray-Dumas area, Moore County, by acquiring Sunray Oil Company's equity in 1560 acres with 6 oil wells prorated to 265 barrels daily and 2 gassers rated at 25,000,000 cubic feet daily. In return for these holdings the Tulsa concern is to receive an interest in 6 completed wells in the Oklahoma City field, according to reports, and a substantial sum payable from future production from the Moore County leases.

Summary of Wells Completed in the United States Week Ending August 1, 1936

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1936	Total Completions this Date 1935
Alabama	....	....	....	....	.....	2	4
Arkansas	1	1	....	....	144	57	89
California	13	11	....	2	2,850	641	499
Colorado	....	....	....	....	.....	6	7
Illinois	....	....	....	....	.....	4	9
Indiana	5	1	4	....	50	133	108
Kansas	33	24	....	9	30,161	945	817
Kentucky	21	16	....	5	488	158	92
Louisiana	21	11	4	6	12,800	610	451
Michigan	15	6	5	4	476	448	287
Mississippi	....	....	....	....	.....	5	13
Montana	4	4	....	....	245	83	84
New Mexico	6	6	....	....	2,933	329	162
New York	....	....	....	....	.....	....	....
Ohio	39	10	18	11	55	1,117	860
Oklahoma	56	46	2	8	56,544	1,708	1,394
Pennsylvania	....	....	....	....	.....	....	78
Texas	226	161	6	59	308,392	7,210	7,219
Utah	....	....	....	....	.....	....	....
West Virginia	....	....	....	....	.....	385	291
Wyoming	3	2	....	1	730	39	41
Florida	1	....	....	1	.....	2	....
Total this week	444	299	39	106	415,868	13,912	12,506
Total last week	450	313	42	95	454,888	....	....
Total this year	13,912	9,279	1,319	3,294	13,493,246	....	....

Comparison of Permits Granted for New Wells

STATE	Week Ending Aug. 1	Total this Mo.	Total this Year	Total this Date Last Year	1935 Year Total
Arkansas	2	2	57	25	70
California	31	31	597	543	925
Louisiana	17	17	704	500	846
Kansas	37	37	1,068	590	1,204
Michigan	17	17	434	322	749
Oklahoma	65	65	1,426	1,296	2,311
Texas	480	480	8,870	6,588	10,800
Total	649	649	13,156	9,864	16,964

PRODUCTION DOWN

Crude output is brought near economic level

UNITED STATES crude oil production averaged 2,937,000 barrels daily during the past week, ended August 1. That was 25,070 barrels a day less than in the previous week and only 19,800 barrels a day more than the Bureau of Mines recommendation. It should be noted, however, that it is customary for the nation's production to be lower in the latter portion of each month than in the earlier part, and that was the case in July.

The national decrease last week was caused primarily by a substantial decline in California, although Oklahoma and Kansas showed small decreases. Output was somewhat higher in Texas, Louisiana, and New Mexico.

California last week averaged 556,500 barrels daily or about 20,000 barrels a day less than in the previous week and within about 6000 barrels of the Bureau of Mines recommendation.

Oklahoma production last week averaged 541,075 barrels daily. That was about 7000 barrels a day less than in the previous week and approximately 28,000 barrels a day less than the federal allocation.

Kansas output last week was 1300 barrels a day lower than in the previous week in averaging 156,025 barrels daily. That was about 8000 barrels a day less than the Bureau of Mines recommendation.

Texas produced, on the average, 1,147,300 barrels daily last week, or about 5000 barrels a day more than in the previous week. But the new rate was only 800 barrels a day above the federal quota.

Louisiana production was up about 1500 barrels, averaging 233,025 barrels daily, or 46,225 barrels a day more than the federal allocation.

New Mexico last week averaged 74,200 barrels daily, or 100 barrels per day more than in the previous week. That was 4800 barrels a day more than the Bureau of Mines recommendation.

REPRESSURING

Wichita Falls, Texas.—Three or more of the shallow sand areas controlled by Magnolia Petroleum Company near Burkburnett are scheduled to be equipped with gas repressuring units within a few months. Preliminary gas injection tests conducted on a block of leases, embracing an area of about 2000 acres situated several miles southwest of Burkburnett townsite, afforded satisfactory results from 1750-foot sand, so the company plans to make its first installation in this area. Most of the wells have been producing for about 20 years, and now average about 2 barrels daily each. Considerable recoverable oil remains in the sand, as drilling was mostly confined to outside locations on the 160-acre sectionized tracts. The program calls for the drilling of input wells near the center of each section. Contract has been made for gas to be delivered by a natural gas company at a minimum pressure of 125 pounds, thus eliminating investment in compressor station equipment.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in July)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING Aug. 1	July 25
TEXAS—			
Texas Panhandle	.....	61,200	61,600
North Texas	.....	59,600	59,300
West Central Texas	.....	25,800	25,700
West Texas	.....	178,100	179,200
East Central Texas	.....	56,100	55,200
*East Texas Field	.....	428,800	427,500
†South Texas	.....	85,900	84,800
†Texas Gulf Coast	.....	251,800	249,400
*Total Texas	1,146,500	1,147,300	1,142,700
OKLAHOMA—			
Oklahoma City	.....	125,600	131,950
Seminole Area	.....	133,000	142,045
Tatums	.....	3,450	3,400
Lucien	.....	12,100	12,250
Fitts	.....	55,975	49,250
Edmond	.....	10,450	11,425
Others	.....	200,500	197,900
Total Oklahoma	569,800	541,075	548,220
KANSAS—			
Ritz-Canton	.....	7,075	6,100
Voshell	.....	2,925	2,900
Nikkel-Hollow	.....	3,800	3,875
Sedgwick	.....	5,375	5,400
Burrton-Haury	.....	13,725	13,450
Lorraine	.....	7,975	8,200
Oxford	.....	3,025	2,900
Others	.....	112,125	114,500
Total Kansas	164,200	156,025	157,325
LOUISIANA—			
North Louisiana	.....	83,325	82,300
Louisiana Gulf Coast	.....	149,700	149,300
Total Louisiana	186,800	233,025	231,600
ARKANSAS	31,300	29,475	29,725
CALIFORNIA—			
Long Beach	.....	66,000	67,000
Santa Fe Springs	.....	44,000	44,000
Huntington Beach	.....	36,000	37,000
Dominguez	.....	27,000	25,000
Inglewood	.....	11,500	12,000
Ventura Avenue	.....	33,000	33,500
Seal Beach	.....	7,500	10,000
Midway-Sunset	.....	47,500	59,500
Elwood	.....	12,500	12,500
Kettleman Hills	.....	77,000	78,000
Mountain View	.....	25,000	26,500
Playa del Rey	.....	12,500	12,300
Others	.....	157,000	158,700
Total California	550,800	556,500	576,000
MOUNTAIN STATES—			
Wyoming	38,800	38,300	37,900
Montana	13,400	15,900	16,800
Colorado	4,700	4,500	4,600
Total Rocky Mountain States	56,500	58,700	59,300
NEW MEXICO	69,400	74,200	74,100
EASTERN STATES	107,700	110,200	109,800
MICHIGAN	33,800	30,500	33,300
*Total United States	2,917,200	2,937,000	2,962,070
**Surreptitiously produced oil in East Texas, not included in above figures, estimated at	.....	15,000	15,000
Grand Total, including surreptitious production	.....	2,952,000	2,977,070

† Coastal Section of South Texas is included with Texas Gulf Coast.

Crude Runs to Stills, Stocks of Finished and Unfinished Gasoline and Gas and Fuel Oil, and Cracked Gasoline Production, Week Ended July 25, 1936

(Figures in thousands of barrels of 42 gallons each as reported to American Petroleum Institute)

DISTRICT	Daily Refining Capacity			Crude Runs to Stills		Stocks of Finished and Unfinished Gasoline				Stocks of Gas and Fuel Oil			Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
		Reporting				Finished								Reporting		
	Potential Rate	Total	%	Daily Average	% Operated	At Refineries	Terms. Trans. Pipe Lines	Unfinished in Naphtha Distillates	Total Finished and Unfinished	Gas. Oil & Distillate	Residual Fuel Oil	Total	Potential Rate	Total	%	Daily Average
East Coast	612	612	100.0	499	81.5	6,530	11,129	915	18,574	5,415	5,358	10,773	534	534	100.0	114
Appalachian	154	146	94.8	110	75.3	1,162	1,069	249	2,480	297	215	512	79	78	98.7	25
Ind., Ill., Ky	462	444	96.1	400	90.1	5,626	2,871	793	9,290	2,726	2,321	5,047	349	348	99.7	130
Okla., Kans., Mo	453	384	84.8	317	82.6	3,434	2,024	542	6,000	910	2,498	3,408	256	228	89.1	74
Inland Texas	330	160	48.5	115	71.9	1,036	125	186	1,347	370	1,335	1,705	148	105	70.9	30
Texas Gulf	680	658	96.8	647	98.3	4,544	220	1,989	6,753	4,076	3,757	7,833	399	393	78.5	146
Louisiana Gulf	169	163	96.4	135	82.8	1,162	455	242	1,859	1,238	1,158	2,396	77	74	96.1	30
North La.,—Ark	80	72	90.0	39	54.2	175	62	86	323	97	338	435	46	44	95.7	9
Rocky Mountain	97	60	61.9	50	83.3	1,060	.....	101	1,161	184	615	799	46	39	84.8	11
California	852	789	92.6	495	62.7	9,072	2,331	1,170	12,573	.....	.....	72,242	280	280	100.0	69
Reported	.....	3,488	89.7	2,807	80.5	33,801	20,286	6,273	60,360	.....	.....	105,150	.....	2,123	95.9	638
Estimated Unreported	.....	401	.....	183	.....	3,918	1,271	270	5,459	.....	.....	2,445	.....	91	.....	47
*Estimated Total U. S. July 25, 1936	3,889	3,889	.....	2,990	.....	37,719	21,557	6,543	65,819	.....	.....	107,595	2,214	2,214	.....	685
*Estimated Total U. S. July 18, 1936	3,889	3,889	.....	2,925	.....	37,897	21,704	6,533	66,134	.....	.....	106,999	2,214	2,214	.....	665
U. S. B. of M., July, 1935	.....	.....	.....	2,739	.....	†30,550	†19,922	†5,974	†56,446	.....	.....	†108,322	.....	.....	.....	602

* Bureau of Mines basis currently estimated. † As of July 31, 1935.

ENLARGE FACILITIES

Dehydration, gasoline plant for Liberal, Kan.

Wichita. — Panhandle Eastern Pipe Line Company, Kansas City, Missouri, recently awarded contract to The Stearns-Roger Mfg. Company of Denver, for a combination absorption gasoline plant and gas dehydration plant, to be built near Liberal, Kansas. The contract was placed on a turnkey basis, contractor to furnish design, labor and materials.

The absorption plant will be built to handle 135,000,000 cubic feet of gas per day with provision for economical expansion to ultimate contemplated load of 200,000,000 cubic feet per day. Operating pressure is expected to be 450 pounds, though all construction will be designed to handle gas at 500 pounds working pressure. Gasoline loading line and 10-car loading rack is included, loading vapors being piped back to the plant.

Dehydration of the pipe line gas will be handled by a calcium chloride brine absorption and evaporation installation with butane refrigeration plant in connection, in order to secure exceptionally low dew point. This part of the project will be built to handle the full expected load of 200,000,000 cubic feet daily.

The plant absorbers constitute an interesting part of the equipment. There will be four main absorbers 69 inches in diameter by 57½ feet net shell height, shells to be of 1½-inch steel. Each absorber will contain in its base a gas scrubbing section to act as inlet scrubber. Above this scrubbing section will be 16 bubble cap plates. Above these at the top of the absorbing section will be another unit to act as outlet gas scrubber. Above this second scrubbing section will be four brine contacting plates with another scrubber above these to remove traces of dehydration solution from the outgoing gas. With this plan, incoming gas is thoroughly scrubbed and the gasoline extracted from it; the gas is then dehydrated and again thoroughly scrubbed and delivered clean and dry ready for pipe line tranmission.

Stearns-Roger has started work on the project and all phases of it will be rushed to completion in time for autumn gas load conditions.

PIPE ANDERSON GAS

Dallas, Texas.—Athens Natural Gas Company will start construction work this week on a 16-mile 4½-inch natural gas line from the Cayuga field, Anderson County, to Athens, Texas, where a number of industrial consumers have contracted to buy gas on long-term contracts. Fredell Construction Company has been awarded contract to lay the line, which will operate at well pressure as gas wells at Cayuga average 2000 pounds rock pressure. Headquarters of Athens Natural Gas Company are located in the Burt Building, Dallas. Officers of the company are: Wofford Cain, president; Clint W. Murchison, vice president; W. M. Wofford, secretary-treasurer.

PANHANDLE GASOLINE

Pampa, Texas. — Production of natural gasoline in the Texas Panhandle has remained at an almost uniform level during the past three months, with a tendency to decline in volume as state authorities gradually attain better enforcement of the gas-waste rules. During June the 48 active plants produced 19,089,000 gallons of gasoline, or 71,400 gallons below the May output. Production during April was 19,265,400 gallons. Phillips Petroleum Company produced about 48 percent of the district's current gasoline yield.

ABANDON LINES

San Angelo, Texas. — Illinois Pipe Line Company, Findlay, Ohio, will abandon approximately 125 miles of trunk line, involving two idle loops in its system that extends from Yates field via Del Rio thence to Lytle station, Atascosa County, where connection is made with Humble Pipe Line Company's lines. Loops to be abandoned include 50 miles of 8-inch screw pipe between Yates field and Del Rio, and 75 miles of 10-inch screw pipe between Del Rio and Lytle. The lines were placed in operation in 1928, but due to the restriction of production in the Yates field the loops were in service for only a few years. The company is delivering about 9000 barrels of Yates crude daily to Humble Pipe Line Company at Lytle, and has a surplus capacity without using the loops. Pipe to be salvaged will be sold while in the ground at competitive bidding, according to reports.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to July 31, 1936)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$0.94	2¢	40—$1.18	1- 9-36
N. and N.-C. Texas	28— .84	2¢	40— 1.08	1- 9-36
Texas Panhandle				
Gray County	34— .86	2¢	40— .98	1- 9-36
Carson-Hutchinson	34— .81	2¢	40— .93	1- 9-36
West Texas				
Ector, Pecos, W'kler Crane, Upton, Howard and Glasscock	29— .76	2¢	36— .90	1-14-36
West Central Texas	28— .84	2¢	40— 1.08	1- 9-36
East Central Texas	28— .91	2¢	40— 1.15	1- 9-36
East Texas	*1.15			1- 9-36
Talco	* .60			4-15-36
Texas Gulf Coast				
Anahuac-Dickinson	30— 1.04	2¢	40— 1.24	1- 9-36
Conroe	35— 1.24	2¢	40— 1.34	1- 9-36
Tomball	*1.30			1- 9-36
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbe Ridge	Below 17— .88	2¢	34— 1.22	1- 9-36
South and S. W. Texas	Below			
Refugio (Light)	17— .88	2¢	34— 1.22	1- 9-36
Refugio (Heavy)	* .90			1- 9-36
Saxet	* .90			1- 9-36
Mirando	* .85			1- 9-36
Pettus	*1.25			1- 9-36
Salt Flat	* .97			1-14-36
Darst Creek	* .97			1-14-36
Placedo (Heavy)	* .85			4- -36
Placedo (Light)	* .95			4- -36
Port Lavaca	* .97			
Plymouth	* .90			12-17-35

* All gravities—flat rate.
† Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Arkansas				
El Dorado (Light) and Rainbow	25— .78	2¢	40— 1.10	1-10-36
El Dorado East Field and Smackover	* .75			1-10-36
North Louisiana	25—$0.78	2¢	40—$1.10	1-10-36
Urania	* .97			1-10-36
South Louisiana	Below			
Lockport	19— .92	2¢	34— 1.22	1- 9-36
Iowa, Cameron Mds.	Below 19— .82	2¢	34— 1.12	1- 9-36
Rocky Mountain States				
Salt Creek	29— .94	2¢	40— 1.18	1-10-36
Elk Basin	*1.18			1- 9-36
Grass Creek (Light)	*1.18			1- 9-36
Grass Creek (Heavy)	* .58			1- 9-36
Big Muddy	*1.11			1- 9-36
Rock Creek	*1.12			1- 9-36
Sunburst	*1.15			6- 5-36
Lance Creek	* .90			1- 9-36
Osage	*1.08			
Cat Creek	*1.07			8-25-33
Cut Bank	*1.35			6- 3-36
Pondera	*1.05			9-29-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	* .75			9-29-33
Mid-West States				
Lima	*1.25			1-10-36
Illinois	*1.23			1- 9-36
Princeton	*1.23			1- 9-36
Western Kentucky	*1.23			1- 9-36
Pennsylvania				
Bradford	*2.45			1-13-36
Sw. Pa. Pipe Line	*2.17			1-13-36
Eureka Pipe Line	*2.12			1-13-36
Buckeye Pipe Line	*1.97			1-13-36
Corning Grade	*1.42			1-13-36
Michigan				
Central Michigan	*1.42			6-15-36
Muskegon	* .70–1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

* All gravities—flat rate.
‡ Average price, all oil sales being to small refineries.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut °4
September 6, 1935	Up 5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up °28
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up °9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....
February 26, 1936	.....	.....	Up '5

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and ¾ of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.
° Signal Hill 26 gravity.
' Seal Beach 26 gravity.

CALIFORNIA OIL PRICES

(All gravities above those quoted take highest prices of that field. Effective February 26, 1936)

Gravity	Signal Hill	ea Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs	New Hall McKittrick Kern River Round Mountain	Mountain View	Midway-Sunset Buena Vista Hills Elk Hills	Lost Hills	Coalinga	Wheeler Ridge
14–14.9	$.80	$.79	$.78	$.79	$.80	$.76	....	....	$.80	$.76	$.76	$.77	$.78	.....	$.70	....	$.70	$.70	$.70	....
15–15.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
16–16.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
17–17.9	.80	.79	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
18–18.9	.80	.79	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
19–19.9	.82	.79	.82	.87	.84	.81	....	....	.85	.76	.78	.77	.78	.....	.70	$.70	.74	.74	.71	$.70
20–20.9	.85	.79	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	.....	.....	.70	.78	.78	.72	.70
21–21.9	.88	.79	.89	.93	.93	.86	....	....	.91	.80	.85	.77	.84	.78	.....	.73	.82	.82	.74	.70
22–22.9	.92	.82	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	.....	.77	.87	.86	.78	.72
23–23.9	.95	.86	.96	.99	1.02	.96	$.84	....	.96	.88	.93	.82	.92	.78	.....	.80	.92	.90	.82	.76
24–24.9	.99	.91	1.00	1.02	1.06	.99	.88	.....	.99	.91	.96	.85	.96	.82	.....	.84	.97	.94	.86	.79
25–25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	....	1.02	.95	....	.89	.99	.86	.....	.88	1.01	.98	.99	.83
26–26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	....	1.05	.98	....	.92	1.03	.90	.....	.91	1.06	1.02	....	....
27–27.9	1.10	1.05	1.11	1.12	....	1.10	1.03	....	....	1.02	....	.96	1.06	.95	.....	.95	1.10	1.06	....	....
28–28.9	1.14	1.10	1.14	1.15	....	1.14	1.07	....	....	1.06	....	.99	1.10	.99	.....	.99	1.15	1.10	....	....
29–29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12		....	1.09	....	1.03	1.14	1.03	.....	1.02	1.20	1.14	....	....
30–30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	F.O.B.	....	....	....	1.07	1.17	1.08	.....	1.06	1.25	1.18	....	....
31–31.9	....	....	....	1.24	Line	1.24	1.22	Ship	Kettleman Hills			1.11	1.21	1.12	.....	1.09	1.29	....	....	....
32–32.9	....	....	....	1.27	....	1.27	1.27	....				1.14	1.25	1.16	.....	1.13	1.34	....	....	....
33–33.9	....	....	....	....	....	....	1.32	$1.28		1.19		1.18	1.28	1.20	.....	1.17	1.38	....	....	....
34–34.9	....	....	....	....	....	....	1.37	1.32	....	1.23	....	1.22	1.32	1.25	.....	1.20	.....	....	....	....
35–35.9	....	....	....	....	....	....	1.42	1.35	....	1.27	....	1.25	....	1.29	.....	....	.....	....	....	....
36–36.9	....	....	....	....	....	....	1.46	1.39	....	1.31	....	1.29	....	1.33	.....	....	.....	....	....	....
37–37.9	....	....	....	....	....	....	1.51	1.43	....	1.35	....	1.32	....	1.37	.....	....	.....	....	....	....
38–38.9	....	....	....	....	....	....	1.56	....	....	1.39	....	1.36	....	1.42	.....	....	.....	....	....	....
39–39.9	....	....	....	....	....	....	1.61	....	....	1.43	....	1.40	....	....	.....	....	.....	....	....	....
40–40.9	....	....	....	....	....	....	1.66	....	....	....	....	1.43	....	....	.....	....	.....	....	....	....

WORLD DEVELOPMENTS and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Drilling Revived

STRUCTURE OF SOUTH TURNER VALLEY BOOMS ONCE MORE

Not since the naphtha possibilities of the south end of Turner Valley, Alberta, neglected in the oil boom years, were demonstrated by the Mercury and Merland producers, have so extensive plans been made for development of the South Turner Valley structure which extends an unknown number of miles south of the present producers.

Reason for renewed interest in Turner Valley is the success achieved at the Turner Valley Royalties well, located in the southwest flank, now producing between 860 and 900 barrels of crude oil daily. Crude oil is the objective of the present activity.

Following are some of the companies planning to drill or actually commencing drilling operations in south Turner Valley at the present time:

(1) Turner Valley Royalties Company is considering drilling another well a little to the north of its big crude producer.

(2) Renfrew Royalties well, a short distance south of Turner Valley Royalties, is flowing crude oil by heads while drilling is suspended in the limestone. The bottom of this well is in the limestone and eight-inch casing is said to be in perfect condition to 5535 feet. 6020 feet of six-inch casing is being moved to the location and rapid completion of the well under Roy Widney, veteran Turner Valley driller, is anticipated.

(3) Richfield Royalties well, 1500 feet south of Turner Valley Royalties, is to be completed at once from 4400 feet with rotary equipment.

(4) The North West well, at which drilling operations have long been suspended, is to be completed at once from 3190 feet by Foundation Royalties. This well is located a short distance northwest from the Highwood No. 2 well, now being drilled from the limestone. It is directly south of Turner Valley Royalties.

(5) It is understood consideration is being given to plans to complete the Sunburst Mid-Royal well in the far south of the valley.

(6) Mercury Oils, Limited, is planning to drill Mercury 8 well at a location east of Turner Valley Royalties.

(7) Dalhousie Oil Company, an Imperial Oil subsidiary, will drill in the vicinity of Turner Valley Royalties it was reported.

(8) The old Banner well, to be completed by Canadian Maple Leaf Royalties, was scheduled to resume drilling immediately at 2600 feet. This well is believed to be located in the southwest extension of Turner Valley, proven by Turner Valley Royalties as a crude oil producing area.

(9) The Pekisko well, still farther south, is drilling in the limestone near the ranch owned by King Edward.

(10) The Highwood 2 well was more than 100 feet in the limestone recently and the well is expected to be completed before the end of July.

(11) Sovereign Royalties well, located south of Richfield and Renfrew, is being drilled from 2333 feet.

Outside Turner Valley an interesting test has just been resumed at 2700 feet by Franco Oils, Limited, near Cardston. According to W. J. Thorn of Moose Jaw, a vice-president of the company, there is a good gas flow with some showings of crude.

The two active wells closest to Turner Valley Royalties are Renfrew Royalties and Richfield Royalties. At the Renfrew well a considerable amount of crude has been obtained in upper horizons and this is looked upon as a good indication of what may be expected in the limestone.

CANADIAN PLANT

700-barrel refinery may be completed this fall

Completion of a refinery at Bitumount, Alberta, Canada, 50 miles north of Fort McMurray, on the Athabasca river, is expected early this fall and production of Diesel oil and asphalt will commence on a considerable scale, R. C. Fitzsimmons, president of International Bitumen Company, Edmonton, stated recently.

Fitzsimmons was in Edmonton completing arrangements with local concerns supplying material for the plant. All orders had been placed in Alberta, and the capital of the company had come largely from Alberta and British Columbia interests, he stated.

"We hope to produce around 700 barrells of finished oils and asphalts per day," he said. "We expect to dispose of large supplies of Diesel oil in the north."

Dragline scrapers are being used to excavate bituminous sands, from which crude bitumen is extracted. The new refinery will be capable of separating asphalt from bitumen, the remaining vapors of which are then to be separated by fractional distillation and scrubbing into heavy Diesel oil and vapors. Lighter Diesel oil and gasoline vapors will come from a second "bubble tower." The refinery under construction is of the tube still type and operations can be changed readily to suit immediate demands for different types of products from the bitumen.

OUTPUT HIGHER

First 6 months indicate increase for Ecuador

If Ecuador produces oil the rest of the year at a rate equal to the average established during the first six months, 1936 production will exceed the output in 1935 by about 128,220 barrels. Figures prepared by the Inspector of Mines of Ecuador show 930,051 barrels recovered in the first six months of 1936 as against 868,596 barrels recovered in the first six months of 1935. Total production in 1935 in Ecuador amounted to 1,731,882 barrels.

Production by months for 1935 and the first half of 1936 is given in the following table:

CRUDE OIL PRODUCTION IN ECUADOR

Figures in U. S. barrels of 42 gallons each converted from gallon figures prepared by the Inspector of Mines of Ecuador.

Month	1935	1936
January	147,414	148,980
February	139,554	138,721
March	151,365	162,125
April	145,212	159,666
May	147,245	163,855
June	137,806	156,704
July	144,812	.....
August	141,978	.....
September	138,987	.....
October	147,450	.....
November	143,518	.....
December	146,541	.....
Totals	1,731,882	.....
Total First 6 Months	868,596	930,051

NO DEEP TEST

Data on strata below 2500 feet are lacking

Charles Ginart, manager of Motembe Mining Company, which produces naphtha from Motembo basin in Cuba, writes that Cuba has never been given the benefit of a deep test for oil.

Most of the naphtha wells are completed around 1500 feet, he says, and no well in Cuba deeper than 2500 feet has been called to his attention. Only once has the use of rotary equipment been attempted on the island, according to Ginart.

MORE WILDCATS

Austria reports increase in prospecting licenses

Increasing activity in Austria in connection with oil prospecting is indicated by the fact that at the close of 1935 there were 65,390 prospecting licenses filed with the Austrian mining authorities. Of these, 46,816 applied to prospecting for crude oil, oil shale and natural gas. The federal and provincial governments held 10,400 of these licenses and the remaining 36,416 were held by private interests, it was stated.

Production of crude oil in Austria during 1935 amounted to 6616 metric tons against 4178 metric tons in 1934, and of oil shale 350 metric tons against 412 metric tons. Production of natural gas declined from 15,160,000 cubic meters in 1934 to only 88,520 cubic meters in 1935.

Production of crude oil in Austria in the first six months of 1936 is estimated at approximately 4200 metric tons, the report states.

MEXICAN WILDCATS

Continental Oil Company was preparing to make a drill stem test last week of formation at 3510 to 3529 in Zacate 5 in Mexico, just across the border from McAllen, Texas.

Three other wildcats were active in the northeast Mexico district. Ohio-Mex Oil Company's Rancherias 4 was drilling in shale at 5896 feet. Cia Mercedes de Petroleo's Santa Gertrudis 1 was trying to get to bottom and having difficulty with heaving shale. Munoz & Martinez's No. 3 was preparing to drill plugs at 1535 feet and complete as a gas well.

TO DRILL FOR OIL

Structures north of Roma recommended for testing

Search for oil on structures delineated north of Roma, Queensland, Australia, probably will go ahead now with greater intensity than ever. The Federal government of Australia has decided to lend to approved companies or persons on a dollar for dollar basis up to £250,000 (about $1,250,000) for drilling for oil in Australia.

Dr. W. G. Woolnough, geological adviser to the commonwealth, closed his report to the minister of the interior on Arcadia and Hutton domes with the following sentence: "I unhesitatingly recommend that the search for oil in the structures delineated by Oil Search, Limited, to the north of Roma should be pushed to an absolutely conclusive result."

ROSS TO DRILL

Location chosen is south of Turner Valley field

Charles W. Ross, son of C. C. Ross, minister of lands and mines for Alberta, Canada, will head a company which will drill a well immediately in the extreme south end of Turner Valley, Alberta. The company of which Mr. Ross, Jr., is president is Newfold Royalties, Limited. Location for the well is legal subdivision 11, Section 21, Township 18, Range 2, west of the fifth meridian, or just south of Sovereign Royalties well now drilling, which, in turn, is south of Turner Valley Royalties.

Associated with Mr. Ross on the directorate of Newfold Royalties Limited, is R. A. Brown, Jr., and J. W. Moyer of Calgary, secretary. Brown is president of B. & B. Company, which will drill a well close to the big Turner Valley Royalties crude producer. The cellar has been completed and derrick and rotary equipment will be installed as soon as possible.

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WEEKLY STAFF REPORT

Oklahoma City.—Soaring into the upper production bracket to steal the show from the fast-fading Oklahoma City oil field, the Moore pool of Cleveland County climbed to first place for the week as Sinclair Prairie Oil Company's Peaches 1, NE SE NW 21-10n-2w, came in to establish a potential of between 25,000 and 30,000 barrels of oil daily.

Coming into the Wilcox sand from 7295 to 7297 feet, the well was bailed down to determine a water shut-off, then deepened to 7309 feet. The crew bailed down 1800 feet, when it headed up, cleaned itself and began flowing. The flow was accompanied by an estimated 23,700,000 cubic feet of gas. Peaches 1 is due west to the same interest's Marvel 1, NW SW SE 21-10n-2w, now bottomed at 7267 feet, but which may be deepened.

In direct contrast to the Peaches 1 is the same company's Hussman 1-B, NEc SW 21-10-2w, which operators fear may be a dry hole. The hole was bailed down 2500 feet, but it was impossible to bail lower, so looks like a hole full of water. Geologists, however, are still of the opinion that the field will be two or three miles long in a northwest-southeast direction, and only two or three locations wide.

Carter Oil Company and Gulf Oil Corporation's Walker 2, SW NE NE 33-17n-4w, Crescent field of Logan County, commanded attention for the second time with an astounding increase in potential production. Walker 2 is an old well that originally made 5039 barrels of oil in 24 hours from 6242 feet in the second Wilcox sand. Recently deepened to 6269½ feet, the well flowed 2300 barrels of oil in the first two hours and 15 minutes, the next hour flowed 850 barrels, and the fourth hour 750 barrels of oil. After being deepened only 4½ feet to 2247 feet, the well made 6957 barrels of oil in the next 10 hours, averaging almost 700 barrels per hour. It is now shut in for storage room.

Extensive shooting was taking place in the Edmond pool of Oklahoma County, with Pure Oil Company the most active. Most of the shots are being made in the Wilcox sand horizon. On the last two completions of the company there, the horizon was shot prior to taking potential.

Pure Oil Company's Malm 1, SEc SW 30-14n-3w, which was completed July 10 at 6700 feet for a potential of 20,580 barrels of oil and 27,000,000 cubic feet of gas, was shot with 132 quarts between 6600 and 6696 feet, and in four hours produced 3554 barrels of oil. The potential for 24 hours was 21,326 barrels of oil.

The same company's Malm 5, NW SE SW 30-14-3w, which was completed on March 6 at 6696 feet, had an old potential of 5562 barrels of oil and 12,000,000 cubic feet of gas. It was shot with 96 quarts between 6632 and 6696 feet and established a new potential of 6984 barrels of oil and 15,000,000 cubic feet of gas.

Same operator's Malm 9, SE NW SW 30-14-3w, was shot with 48 quarts at 6535 feet, and made 128 barrels of oil the first hour, 49 barrels the second, 52 barrels the third, 54 barrels the fourth hour, and had gas estimated at 3,000,000 cubic feet.

In the Mansion district of the Oklahoma City oil field, oil men watched two outpost tests, the most northerly of which is I. A. O'Shaughnessy's Berlowitz 1, SE SW NE 9-12n-3w, reported as coring at 6721 feet in dolomite, seeking the Wilcox sand at around 6730 feet. It is supposed to be located on a new stringer of the Mansion high.

Farthest northeast test well in the district is Clark & Company's Cook 1, NWc 23-12n-3w, which was drilling ahead below 3900 feet. It is supposed the well will prove up considerable territory which has been cited as being "off the structure."

State wells in the area being drilled by Sunray Oil Company and Phillips Petroleum Company continue routine drilling, none of them making any unusual showing. That the area has slowed down is shown by the fact that only 20 drilling tests were shown, with 6 locations and cellars yet to be started. Best of the 10 State wells being completed at present is State 6, C S½ NEc 27-12n-3w. It flowed 350 barrels of oil an hour while being drilled in at 6397 feet after topping the sand at 6333 feet. State 2 was given a potential of 13,410 barrels of oil in 24 hours from a total depth of 6343 feet in the Wilcox sand last week.

British-American Oil Producing Company's Gast Heights 1, in Gast Heights Addition, stopped at 6500 feet and made 89 barrels of oil natural and 63 barrels of water in 24 hours. Another gas lift test yielded 106 barrels of oil in 3 hours.

Barnsdall Oil Company and Bay Oil Company's Guthrie 2, at 6461 feet, has been given a potential of 157 barrels. The same interest's Foraker 1, at 6413 feet, made 1554 barrels of oil on gas lift.

In the West Lovell pool of Logan County, Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Johnson 1, NWc SE 20-18n-4w, topped the second Wilcox sand at 6133 feet and drilled to 6136 feet, swabbed down to 5000 feet, and using gas pressure, made a flow of 40 barrels of oil. Crew was pulling tubing to bail.

South Oklahoma

OPERATORS WATCH DEEPEST TEST IN THE STATE

Ardmore.—With most wells in southwestern Oklahoma drilling ahead at routine depths, oil men turned their attention to the state's deepest wildcat test, Sinclair Prairie Oil Company's Stockton 1, SEc SW 26-6s-2w, which is cited as the key well of the area.

Outstanding event of the area for the week was the new producer in the Cement pool of Caddo County, Magnolia Petroleum Corporation's Medrano 5, SE NW SW 36-6n-10w, which flowed 1232 barrels of oil in 24 hours through casing and tested 36.3 gravity. Production was found at the 3400-foot level from a sandy shale. Tubing was being run for another test of the well, which also had an estimated 1,500,000 cubic feet of gas.

Further headway toward testing Stockton 1 was made last week when specially fabricated 5-inch casing was set on top of the Simpson dense lime at 8448 feet and cemented. The hole is at 8565 feet. Statewide interest is being manifested in this test, and many operators are of the opinion that it should make a producer from the lime, which had good showings of oil.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Westheimer 1, SW SE SW 27-6s-2e, in Love County, was opened for a test after being shut down for 11 days, and flowed 65 barrels of oil and 15 to 20 barrels of water during a 24-hour period. It was then shut down for a packer.

In the Frederick area of Tillman County, Gulf Oil Corporation's Wearmouth 1, SE NW SE 31-1s-18w, continued to mill on the plug in top of a string of drill pipe, lost in the hole at 5127 feet. The same interest's McWilliams 1, NW SW SW 15-3s-17w, was

drilling in lime and shale at around 5340 feet.

The deep test for western Marshall County, Paul R. Robb et al's Burdell Vittitoe 1, NEc SE 11-5s-4e, which stopped at 5461 feet, 9 feet in the Viola lime, is to be cleaned out and deepened to the Wilcox sand by Henry W. Marcum and Patsey Oil Company. Expiration of the block forced Robb and his associates to shut down, but the lease has been renewed and deepening operations are to be begun immediately. Vittitoe 1 was shut down more than a year ago. It had the Hunton lime at 5147 feet and yielded 28 feet of saturation and showed considerable gas. The Viola lime was topped at 5457 feet and cored to 5466 feet, the core showing the horizon almost level with a slight showing in the core. Ramsey Petroleum Corporation has several leases nearby which were taken on the strength of a showing had in 1918 when a test drilled in SEc SW 17-5s-5e made 100 barrels of 67 gravity oil. Meanwhile, Superior Oil Corporation and Helmerich & Payne's Taliaferro 1, C SE SE 26-5s-5e, continued drilling in Caney shale. The test, which is one mile southeast of Madill in Marshall County, has a contract which calls for a 4000-foot test with the option to go 8000 feet if necessary.

W. B. Riddle et al's Johnson 1, C SW SE 20-8s-2w, proposed 3500-foot test of the Ellenberger lime, and located 1½ miles north of the Red River and 2 miles south of Leon in Love County, was drilling ahead below 1700 feet.

Little change was noted in Carter Oil Company's Walker-Voorhees 1, C SE SW 34-5s-2w, on the extreme southwest edge of Carter County, which was drilling ahead at 7732 feet in soft gray shale. Carter's Davidson 1, C NW SW 26-5s-5e, north of Erick in Beckham County, was drilling ahead at 6112 feet in black shale.

Gulf Oil Corporation's Johnson 8, C SW SW 28-2s-3w, in the Fox pool of west central Carter County, was drilling in hard brown lime below 6500 feet.

SOONER WILDCATS

Starting of another test at Centrahoma features

Tulsa.—Centrahoma, the huge structure in south-central Coal County which has sent two wildcatters home disappointed, to have another chance to prove itself productive, as Carter Oil Company and Ramsey Petroleum Corporation prepare to drill the third test in the area, their Warne 1, NEc NW 31-3n-9e.

Located three miles west and six miles due north of Carter Oil Company's Thompson 1, CSL NE NW 34-2n-9e, which was abandoned at 7126 feet, the new test will be carried down 5000 feet to the Wilcox sand, excluding the possibility that shallower production is found. It is also six miles west of the second test on the Centrahoma structure, Shell Petroleum Corporation's Hill 3, SEc NW 30-3n-10e, which is shut down waiting orders after plugging back to 6457 feet.

Staking of location for Warne 1 followed a thorough and intensive geological survey of the region, with the assistance of some seismic study. Work on the test is to be started immediately.

In the Pauls Valley area of Garvin County, where wildcat tests have been numerous and disappointing, Tide Water Oil Company is to start a test about August 15, and will have the support of six other companies. The group is comprised of Sinclair Prairie Oil Company, Empire Oil & Refining Company, Stanolind Oil and Gas Company, Phillips Petroleum Company, Devonian Oil Company and Darby Petroleum Corporation. The community block comprises the south half of Section 21-4n-1e, and the north half of Section 28-4n-1e. The test will be in the NEc NW 28-4n-1e, northwest of McElreath & Suggett's Lassater 1, SEc SW 2-2n-1w. Bottomed in the Wilcox sand at a total depth of 5010 feet, Lassater 1 is waiting on orders while reaming to total depth.

The possibility of a new Wilcox sand pool for Noble County was seen during the past week in Stanolind Oil and Gas Company's Gilham 1, NE SE SE 14-22n-1e, a wildcat near Otoe City and midway between the Marathon and Polo pools. After coring into the top of the Wilcox sand at 4638 feet, a slight show of oil was had. Another core taken from 4645 to 4650 feet had a five-foot recovery of sand with an odor of oil, and operators were coring ahead.

In another part of Coal County, out of line with the Centrahoma structure, in the wildcat area known to oil men in the Mid-Continent as the Clarita sector, two more tests have been announced. They are Continental Oil Company's Breedlove 1, SE NE SW 24-1n-8e, and the same interest's Kirby 1, SW SE SW 23-1n-8e.

Other operations in the area drilled ahead with nothing showing. Carter Oil Company's James 1, SW NW SW 35-1s-8e, recovered five feet of dense lime in a core from 3537 to 3542 feet. Sinclair Prairie Oil Company's Culver 1, NEc SW 16-1n-8e was coring ahead and Continental Oil Company's King 1, NE SW NE 26-1n-8e, was drilling at 2598 feet in shale.

An interesting semi-wildcat, in the Laffoon pool of Lincoln County is Mid-Continent Oil Corporation's Hillman 1, SW SE NE 29-13n-6e. The last 6 inches of a core taken from 4457 to 4460 feet was well saturated with black oil.

Only a few other wildcat locations were reported. B. F. Lundy's G. C. Prince 1, NEc SE 32-1n-2w, in Garvin County, was a location, as was Burke-Greis' Dunson 1-A, SE NW NW 3-9n-8e, in Hughes County, and Robert Wilson et al's Dickerson 1, NEc SW 20-29n-1w, in Kay County.

Big Fitts Well

MAKES 1350 BARRELS THE FIRST HOUR FROM WILCOX

Tulsa.—The largest producer for the Fitts field of Pontotoc County was completed the past week, when E. H. Moore et al's Patrick 2-A, NE NW NE 31-2n-7e, flowed 1350 barrels of oil in one hour through casing after making 630 barrels the first half hour. Gas was estimated at 12,500,000 cubic feet. Production was had from the Wilcox sand at 4375 feet, thus extending the Wilcox zone of the field slightly to the east.

Two other completions in the field aided in giving the pool some of the highest potential ratings in the state. Sinclair Prairie Oil Company's Wooley SWc 22-2n-7e, was given a 24-hour potential of 3897 barrels of oil after flowing 939 barrels in 6 hours through tubing. The Viola lime was topped at 3930 feet, and after being drilled to 4348 feet, the well was acidized. Gas was estimated at 3,000,000 cubic feet.

The same interests' Wooley 2, SEc SW 22-2-7e, flowed 508 barrels of oil in 4 hours through tubing, and got a potential of 3049 barrels with 3,225,000 cubic feet of gas. The well topped the Bromide at 4225 feet and was drilled to a total depth of 4352 feet.

Fitts is held up as Oklahoma's most efficiently drilled field. As of July 23, there were 378 producing wells in the area, with the upper Simpson zone having 332 of them, rated good for 921,604 barrels of oil daily. Some 25 wells are due to be completed soon, and will swell the total to 990,000 barrels a day. The Hunton lime had 34 producing wells on July 23, and 28 are due to be brought in between now and September 1. The Wilcox-McLish zone has 12 producing wells, and 8 are due in by September 1.

Carter Oil Company's Julia Smith 6, NEc 31-2-7e, made 1245 barrels of oil in 2 hours and 54 minutes with drill pipe in the hole. The flow amounted to nearly 600 barrels during the last 54 minutes. The crew was running tubing with the hole at 4390 feet.

Three new locations were made in the Jesse pool of Pontotoc County: Sunray Oil Company et al's Community-Thompson 2, SEc NW SE 2-1n-7e, W. A. Delaney et al's Davis 1, NE NW SE 2-1n-7e, Lot 1, Block 3, Jesse townsite, Continental Oil Company's Helms 1, NW SE SE 2-1n-8e.

A well that promises to open a new pool for Noble County is Stanolind Oil & Gas Company & Amerada Petroleum Corporation's Gillan 1, NE SE SE 14-22n-1e, in the Otoe City area. It cored to 4670 feet in the second Wilcox sand and recovered 11 feet of sand showing oil. Operators stopped to run casing to 4618 feet in the Simpson dolomite.

An extension of the Naval Reserve pool of Osage County was had when Phillips Petroleum Company's Fred Lookout 1, SEc NW 9-24n-7e, found Bartlesville sand at 2610 to 2645 feet.

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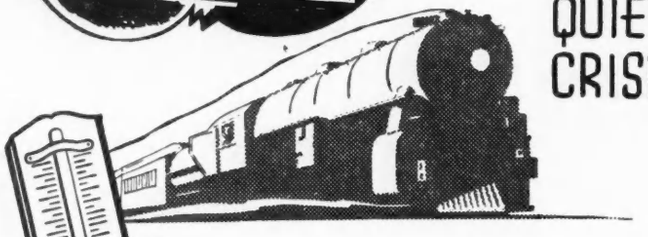

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and after being shot with 60 quarts, showed 192 barrels of oil by heads in 13 hours. This extends the pool two locations north and two locations west. Lewis Production Company & The Texas Company will be forced to start a south offset in NEc NW 9-24n-7e.

A good producer for the east stringer of the Burbank field of western Osage County is Skelly Oil Company's Smith 5, NE NW NW 26-26n-6e. Topping the Bartlesville sand at 2858 feet, the well was drilled to 2925 feet and made 680 barrels of oil natural. Later shot with 190 quarts, the well flowed 2190 barrels of oil in the next 18 hours. It has been shut in for tubing potential. The company is reported making location for two more tests in the same section.

An interesting test of Hughes County is Phillips Petroleum Company's Eberle 1, NEc SW 12-5n-9e. Operators continue having trouble with water intrusions. Seven-inch casing was set at 5679 feet, and when bailed to the bottom, the well yielded one bailer of water per hour, which was thought to be coming from around the pipe. Drilling was being carried ahead at 5695 feet.

Amerada Petroleum Corporation's Klabzuba 1, SWc SE 35-11n-5e, in the Stout area of Seminole County, topped the Wilcox sand at 4621 feet, and at a total depth of 4628 feet, was shot with 10 quarts between 4620 to 4628 feet. After swabbing and cleaning out, the well swabbed 80 barrels of oil in four hours. It swabbed 315 barrels of oil of 30.5 gravity and 5 barrels of fresh water in 16 hours from the first Wilcox sand on a test taken earlier in the week.

30-MILE LINE

Wichita.—Stanolind Pipe Line Company has awarded Sage Construction Company a contract to lay 30 miles of six-inch oil line from the former's Fairport junction, to new prolific production in the Bemis pool of northern Ellis County, Kansas. Work on the line, which is to be started immediately, will extend and increase the capacity of Stanolind Pipe Line Company's northwest Kansas crude oil gathering system.

Smaller lines to lesser production are in service at present but have not proven sufficient to meet the requirements of increased production obtained in the Bemis pool and the surrounding area. Stanolind Pipe Line Company's Fairport station, handling crude from the Paradise area in northwest Russell County, will be the first station on the main line to the Humbolt junction.

Tulsa.—The Oklahoma Pipe Line Company of Tulsa has filed suit against the Oklahoma Tax Commission for $9,606.41, claiming the state income tax act of 1935 did not contemplate taxing income derived from foreign commerce. The amount, the company alleged, was paid for that proportion of its income which came from a pipe line into Canada.

OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARTER COUNTY—		
Skelly, Pierce "D" 2, nw sw ne 17-2s-2w (pb 1792)	10	2203
Cox & Hamon, Daney "A" 2, sw sw sw 4-4s-3w (otd 1037)	5	1097
Pure Oil Co., Westheimer & Daube 19, nw nw nw 10-4s-3w (pb 1085)	27	1130
CLEVELAND COUNTY—		
Sinclair Prairie et al, Rice 1, ne ne ne 28-10n-2w	¶47½-4513	7312
COMANCHE COUNTY—		
Meiling, Fee 4, ne nw nw 35-2n-11w	*	950
COTTON COUNTY—		
Davis, Anderson "A" 1, sw se sw 23-1s-10w	¶2	2184
CREEK COUNTY—		
Anthony, Bruner 1-A, nw ne ne 4-16n-12e (otd 2059)	400	2265
Sinclair Prairie, Gilcrease 1, sw sw se 33-17n-12e (otd 2263)	280	2268
L. B. Jackson, Boling 1, ne nw nw 25-17n-7e	¶4½	2450
Nolan "A" 3, sw ne ne 2-17n-8e	8	1560
GRADY COUNTY—		
Carter Oil, Kearns 1, nw se se 21-3n-5w (otd 1530)	12	1685
HUGHES COUNTY—		
Chapman, Fee 1, se nw nw 1-9n-8e (pb 1720)	25	1730
Phillane Oil, McCaslin 3, nw ne ne 11-9n-8e	75	1800
JACKSON COUNTY—		
Gulf Oil, Byrd 3, se nw nw 14-1n-20w	20	1569
LINCOLN COUNTY—		
Amerada et al, Zimmerman 1, sw sw ne 10-12n-5e	100	4385
Stanolind-Amerada, Rice 9, nw ne ne 11-14n-3e	204	4273
MUSKOGEE COUNTY—		
Joe Paul et al, Turner 1, ne ne se 14-13n-16e	*	2350
OKFUSKEE COUNTY—		
Blackwell O&G, Dolton 2, ne se ne 36-10n-8e	220	1747
Vincent, Musgrove 1, se se ne 13-13n-10e	¶7-50	2624
Carter Oil, King 2, cse sw 2-11n-8e	100	3919
OKLAHOMA COUNTY—		
Anderson-Prichard, Wheeler 1, se se sw 15-12n-3w (pb 6384)	¶4-211	6530
Barnsdall, Oklahoma Heights 1, se sw se 15-12n-3w	1378	6455
Empire, Robb 1, sw nw se 15-12n-3w	lcn.	abd.
Skelly & Uscan, McClannahan 1, se nw se 15-12n-3w	¶3-503	6481
Barnsdall, Bracht 3, ne sw sw 23-12n-3w (otd 6459)	4410	6527
Barnsdall, Cook 1, sw sw nw 26-12n-3w	637	6469
Meriposa 1, sw nw nw 26-12n-3w	¶3-4904	6391
Hall & Briscoe, Thompson 1, ne sw nw 26-12n-3w	lcn.	abd.
OKMULGEE COUNTY—		
Keithley et al, Harris 2, se sw ne 1-14n-14e	7	1694
Iverson Tool, Carter 1-A, sw ne nw 20-14n-14e	*	1250
Sheridan, Thompson 1, nw sw nw 9-15n-11e	10	3012
OSAGE COUNTY—		
Lewis Prod., Whitehorn 6, ne sw sw 10-24n-7e (pb 2536)	41	2563
Carter Oil, Cook 1, se se ne 9-25n-6e (otd 2720)	¶4½-3120	2744
Lewis Prod. 3, se se sw 23-26n-6e	¶5-785	2926
Skelly, Smith 4, nw ne nw 26-26n-6e	¶3½-1445	2918
PONTOTOC COUNTY—		
Burke-Greis, Colbert 2, se se nw 36-2n-6e	431	4500
Fleetborn, Morin 1-A, se se se 20-2n-7e	¶3-3198	4338
Magnolia, Morris 4, se sw se 21-2n-7e	3631	3780
Stahl, Dennis 5-B, sw sw sw 21-2n-7e	¶3-5323	3838
Magnolia, Metropolitan Life 12, se se se 22-2n-7e	¶2¾-3787	3804
Burris "A" 9, nw sw ne 27-2n-7e	4992	3641
Metropolitan Life 11, se ne sw 27-2n-7e	¶6-3575	4285
Sinclair Prairie, Burris 9, se ne nw 27-2n-7e	¶5-4418	3510
Bishop Oil, Simpson 4, ne nw nw 28-2n-7e	¶3¼-2592	4232
Benedum & Trees, Malloy 5, se sw sw 30-5n-5e (otd 2278)	60	2625
POTTAWATOMIE COUNTY—		
Stanolind-Amerada, Goodman 2, nw nw ne 5-10n-4e	*	5573
SEMINOLE COUNTY—		
Amerada-Stanolind et al, Simpson 1, ne ne ne 9-10n-5e	65	6473
W. B. Pine, Cheparney 4, se ne sw 12-5n-7e	774	4259
Atlantic, Patterson 2, se sw ne 8-6n-7e	200	3941
Crosbie, Casey 1, cn½ n½ ne 30-6n-8e	*	4175
Exchange Drlg., Fixico 1-A, cse ne 23-9n-6e	113	3995
Wood Oil, Templeton 2, ne se sw 28-9n-6e	375	4148
Oklahoma Oil, Cody 2, sw sw se 18-9n-7e	241	4091
Delaney, Boring 1-A, nw se nw 20-9n-7e	77	3400
Carter, Pryor 1, ne nw nw 18-10n-6e	*	4619
Twin State, Hamm 1, sw se sw 24-10n-7e	*	4368
Carter Oil, Aldridge 4, cs¼ ne nw 35-11n-6e	192	4138
Twinam 2, cn½ sw nw 35-11n-6e	lcn.	abd.
TULSA COUNTY—		
Whitten, Fulsom 1, sw sw ne 24-19n-11e	*	2298

*Failures; †Junked; ¶Million cu. ft. gas.

65 LOCATIONS

Tulsa.—Oklahoma had 65 new locations the week ending August 1, one more than was reported for the preceding seven-day period. Seminole County led the list with 12 new locations, Creek County was second with 8, and Pontotoc County third with 7. Carter and Osage counties each reported 6 new starts, Oklahoma County 5, Logan County 4, Stephens County 3, Hughes, Jackson, Okmulgee and Payne counties 2 each, with Comanche, Kay, Marshall, Okfuskee, Pottawatomie and Tulsa counties each reporting a single new location.

Operators completed a total of 59 wells in Oklahoma during the past week. Of these, 46 were completed as oil wells for an initial production of 56,544 barrels. Two wells were completed as gassers for a total of 6,500,000 cubic feet. Eight starts resulted in dry holes and there were three abandoned locations.

Large Output

WHERRY WELL MAY BE THE LARGEST IN KANSAS

WEEKLY STAFF REPORT

Wichita.—Despite the intense heat and the excitement incidental to sudden political prominence, Kansas oil operators found time to complete several good producers throughout the state, and open the usual number of new pools during the past week, with Douglas Oil Company's Hauschild 2, CNL NW 15-21s-7w, promising to be the largest producer in the state.

Located at the south edge of the Wherry pool of Rice County, Hauschild 2 is producing from a depth of 3367 feet in chat, and a daily potential of 14,400 barrels was indicated by the test made July 25.

July 28 the well flowed 1100 barrels of oil in one hour and 50 minutes, but has since been shut in for completion.

In the Bemis pool of Ellis County, Ryan Consolidated Oil Company's Bemis 1, NWc 22-11s-17w, in the Siliceous lime at 3393 to 3408 feet, set pipe at 3400 feet and when tested later, showed 2000 feet of oil in the hole the first hour and 2900 feet of oil the second hour. On a potention test which lasted only 21 hours because of damaged equipment, the well produced 1687 barrels of oil, indicating the well to be good for approximately 1891 barrels a day.

An extension of the Silica pool of Barton County was had when Sinclair Prairie Oil Company's Isern 1-A, SW NE SW 25-19s-11w, came in at 3303 feet in the Siliceous lime to flow 910 barrels of oil in 24 hours. It was later acidized with 100 gallons to loosen drill pipe.

North of the same pool, Rosespring Drilling Company's Rick 1, SWc 1-19s-11w, swabbed 10 barrels of oil in eight hours and was waiting on pumping equipment after being treated with 4000 gallons of acid.

Four miles east of Moundridge, in the north end of the Graber pool of Mcpherson County, Continental Oil Company's Hetzke 2-A NE SW SE 20-21s-1w, found oil starting up the hole as drilling was under way at 3309 feet. Potential will not be taken on the well until the Siliceous lime has been acidized. The well is a direct west offset to Marathon Oil Company's Decker 2, a Hunton lime well which was recently completed for 2085 barrels of oil daily.

In the same area, Continental Oil Company's Hetzke 3, NE NW NE 29-21s-1w, flowed 1828 barrels of oil a day during a potential test after being acidized. The same interest's Hetzke 4, NEc 29-21s-1w, topped the Hunton lime at 3303 feet and drilled to 3307 feet in the same formation where 7-inch casing was set. Operators were rigging up standard tools, preparatory to drilling in about August 1.

Another new pool for Ellis County was opened by Vickers Petroleum Company's

Kraus 1, SWc NW 22-14s-19w, which had 2800 feet of 35 gravity oil in the hole from the Siliceous lime between 3735 and 3737 feet. At 3740 feet, oil was slopping over the casing, and operators estimate the well to be good for between 600 and 800 barrels.

Russell County came in for its share of attention when Lario Oil & Gas Company' Steinert 1, NEc 21-15s-15w, opened a small producing area in the Oswald lime after acidizing. Nearly 112 barrels of oil and 5 barrels of water were swabbed from the hole following acidization, and during the next hour, 16 barrels of oil and one barrel of water were swabbed. The Oswald lime was topped at 3060 feet and the well carried ahead to 3071 feet for production.

South of the Hauschild pool of Rice County, Derby Oil Company's Brown 1, NWc SW 22-21-7w, appears to be good for 200 barrels of oil daily from the conglomerate at 3390 feet, after being plugged back from the Siliceous lime. In the Zurich area of Rooks County, Superior Oil Company's Johnson 1, NWc NE 35-10s-19w, had 1800 feet of oil in the hole from 12 feet of saturation at 3500 to 3512 feet, and was drilled ahead to 3519 feet where it will be completed.

In the Harbaugh pool of Russell County, National Refining Company's Reinhardt 2, SW NW SE 25-14s-15w, filled 3000 feet with oil in eight hours from the Gorham sand at 3172 feet. Tubing and rods are being run preparatory to taking a production test of the well, which appears to be good for approximately 600 barrels of oil natural on the basis of the initial fill-up.

Some 14 miles southeast of Hoxie, midway between the Solomon and Saline rivers, in Sheridan County, northwest Kansas, location was made for the farthest northwest wildcat in Kansas this year. The test is Otis Roberts et al's Corrick 1, C NW 34-9s-27w, and marks a new phase in exploration for oil in that sector of the state. Corrick 1 is 32 miles northwest of the nearest oil production in the Wakeeny pool of Trego County. Two other tests have been drilled in Sheridan County. Crowe Oil & Gas Company's Crawford State Bank 1, NWc SW 32-9s-30w, 23 miles west of Roxie, was the first test. It was abandoned at 2137 feet. Flo et al's Davies 1, SE SW SW 27-7s-26w, the second test in the area, was started in 1929, but was finally abandoned at 4540 feet early in 1932.

Saddest symbols of the many employed by the oil man are "D & A." Phillips Petroleum Company's Kaufman 1, NEc NW 2-22s-2w, north of the Sperling pool of Harvey County, had this disheartening abbreviation attached to its drilling report as the week drew to a close. Kaufman 1 topped the chat at 2990 feet; topped the Misener sand at 3428 feet, and was abandoned at 3453 feet in the Hunton lime with a hole full of water. York State Oil Company's Koestle 1, NWc SE 12-17s-9w, northeast of Lorraine, in Ellsworth County, was abandoned as a dry hole after drilling to 3235 feet in the Siliceous lime and getting water. Southwest of Anthony, in Harper County, Marathon Oil Company's Zellers 1, C SW NW 17-35s-8w, was abandoned as a dry hole at 6000 feet. The Siliceous lime was topped at 5480 feet.

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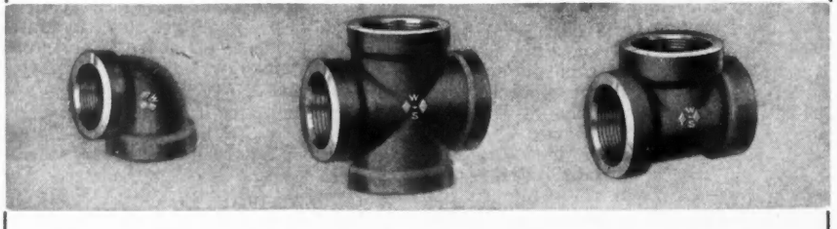

THE WATSON-STILLMAN CO.

ROSELLE, NEW JERSEY

37 LOCATIONS

Wichita.—Kansas had 37 new locations for the week ending August 1, one location less than for the preceding seven-day period. Rice County, reflecting the recent activity in that area, ranked first with a total of 11 starts. Russell County was second with 7, and Reno County a close third with 6. McPherson County made four starts and Ellis County two. Barton, Butler, Ness, Sheridan, Stafford, Sumner and Trego counties each reported one new location.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Yarnell & Spencer, McLean 1, sw sw se 24-17s-11w	*	3353
Bradley Brothers, Peoples State Bank 1, sw se ne 29-18s-11w	lcn.	abd.
Bradley Oil, Schenfler 1, nw ne sw 16-20s-11w	*	3324
BUTLER COUNTY—		
McGinnis et al, Hinnen 1, ne ne sw 18-24s-4e	*	2550
Ellis et al, Pettit 1-A, se se nw 21-28s-6e	53	3163
COWLEY COUNTY—		
Derby Oil, David 4, nw sw ne 2-31s-4e	60	2967
ELLIS COUNTY—		
Phillips Pet, Bemis 1, ne se ne 21-11s-17w	2841	3382
Palmer et al, Fritz Ruder 1, sw sw nw 9-15s-18w	1122	3572
Ruder 6, ne nw ne 17-15s-18w	808	3592
HARVEY COUNTY—		
Phillips Pet., Kaufman 1, ne ne nw 2-22s-2w	*	3453
McPHERSON COUNTY—		
Johnson et al, Johnson 1, sw sw nw 33-17s-1w	*	3332
Empire, Cunningham 1, se se se 26-18s-1w	830	2832
Continental et al, Hetzke 2, nw ne ne 29-21s-1w	1629	3311
PRATT COUNTY—		
Skelly, East Maxedon 3, cn½ s½ ne 25-27s-11w	¶1¾-90	4200
RENO COUNTY—		
Deal O&G, McElwain 5, nw se se 34-23s-4w	408	3593
Shell Pet., Collins 2, sw nw sw 16-24s-4w	1239	3386
Magnolia, Rodgers 2, se sw sw 9-26s-4w	930	4046
RICE COUNTY—		
Stanolind, Panning 1, nw sw nw 33-19s-10w	2097	3293
Mid-Continent, Risse 4, ne se ne 6-20s-10w	2156	3302
McPherson Drlg. et al, Yaple 1, sw se se 10-21s-7w	6184	3380
RUSSELL COUNTY—		
Central Pet., Ginther 2-B, nw nw se 19-12s-15w	*	3140
Bridgeport, Mills 1, sw nw se 34-13s-15w	892	3290
Smoky Hill Oil, Miller 6, sw se sw 30-14s-13w	1558	2946
Empire, Adam Ebel 1, sw sw sw 24-14s-14w	171	3285
Billings, Witt 29, ne sw sw 3-14s-15w	*	3313
Central Pet., Foster "A" 4, se se nw 3-14s-15w	684	3075
Witt 8, nw sw se 3-14s-15w	*	3319
Schaffer, Polson 3, se ne ne 10-14s-15w	1275	3269
Carter Oil, Sellens 1, nw nw nw 15-15s-13w	*	3365
Coralena, Trapp 2, ne se se 30-15s-13w	2065	3262
Southern Oil, Shaffer 3, se ne ne 31-15s-13w	2232	3309
Skelly, Figgins 2, nw sw nw 34-15s-13w	514	3359
SUMNER COUNTY—		
Mann et al, Herrick 1, nw sw se 25-31s-2e (otd 1874)	160	2218
Olson & Shell, Community 1, se nw ne 14-32s-2e	163	2944

*Failures; †Junked; ¶Million cu. ft. gas.

Talco Extensions

TEST 1¼ MILES WESTWARD HAS HOLE FULL OF OIL

WEEKLY STAFF REPORT

Mount Pleasant.—An important westward extension for Talco field was accomplished by Humble Oil & Refining Company's P. J. Dawson 1, SEc of an 80.45-acre lease in the B. H. Epperson Survey, Franklin County, in developing a hole full of oil from Paluxy series at 4220-4330 feet after cementing 7-inch casing at 4206 feet. The well is located 1¼ miles northwest of Earl Bateman and Al Ravenger's E. L. Phillips 1, which is being completed as a pumper after plugging back from water sand at 4357-4361 feet to 4343 feet, or 3985 feet sub-sea. It is 2⅛ miles southwest of flowing production on the Crawford tract, near the fault plane.

Appearance of oil in Dawson 1 confirms the supposition of erratic sand conditions, as it is a north offset to Lawrence S. Flannery, Incorporated, et al's J. L. Hedrick 1, which failed to produce after drilling to 4369 feet, or 3996 feet sub sea, with water sand at 4341-51 feet.

In the event Humble Oil & Refining Company's outpost continues to make pipe line oil when given a pumping test, the field will be wide open for further extensions southwest and immediately south of the Talco-Mexia fault plane.

Current reports on Talco activity revealed that approximately 30 rotary rigs are in service, and a number of tests are due for completion this week. Forced offsets are responsible for a large portion of this development work, which centers within and adjacent to Talco townsite.

Magnolia Petroleum Company and Humble Oil & Refining Company are headed into a major drilling program, since their individual acreage and joint holdings are receiving a big portion of the offset drilling. The former started work last week in the northwest corner of the W. H. Crawford 80-acre lease, adjoining the south border of the townsite, and also on the C. W. Belcher 1, offsetting to the west an 82-barrel per hour flowing well recently completed on its Lucy Blackburn lease.

The high structural position occupied by drilling sites in Talco townsite offers no immunity from early water intrusion. Owenby Drilling Company's F. Jones 1, lot 6, block 16, first producer in the townsite and situated immediately adjacent to the Paluxy section of the fault, has developed 10 percent salt water after being completed as a flowing producer June 8 from Paluxy series at 4264-4347 feet. The hole is bottomed at 3986 feet sub sea and considered a safe margin above bottom hole water. The well has to run a swab each day before it will make its allowable of 124 barrels. According to H. B. Owenby, president of the company, water put in its appearance when nearby offsets drilled into the Paluxy, thus giving rise to possibilities of the water coming from rotary fluid. An analysis of the water will be made to determine the salt content and whether it is formation water.

The Paluxy zone is highly sensitive to "pull" by offset wells. Magnolia Petroleum Company's C. M. Carr 1, west offset to the discovery well, will not flow its allowable when pumping operations are underway on the offset, but will flow natural when the offset is idle.

Humble Oil & Refining Company's L. Stevenson 1, west offset to Porter Bros. et al's Stevenson 1, which tested dry on repeated drill stem tests in Paluxy at 4188-4352 feet, logged Paluxy at 4173-4344 feet, with an elevation of 341 feet, and showed 65 to 95 percent salt water when swabbed in through 7-inch pipe cemented at 4151 feet. Humble Oil & Refining Company has plugged back to 4301 feet, or 3960 feet sub-sea, to make another try for commercial production. In the meantime the latter has acquired Porter Bros. et al's apparent failure and four-acre lease. and cemented a string of 7-inch pipe above the Paluxy to make a swabbing test. Porter Bros. et al planned to deepen this hole to the Glen Rose member of the Trinity series, but failed to obtain sufficient financial support to justify the undertaking. Majors refused to contribute for fear of a second pay zone yielding more attractive production, thereby setting in motion a drilling program on small tracts that could have a disturbing influence upon the crude market.

Owenby Drilling Company's J. F. Barton 1, located on the north end of 4.8-acre lease, adjoining the townsite on the south, was completed July 26 flowing 18½ barrels hourly through open tubing from Paluxy at 4158-4294 feet, with an elevation of 368 feet. The company will drill a second well on the south end of the tract to match offsets, but in the meantime has moved its rig into the townsite to drill Guy Franks 1, lot 14, block 16.

The market for Talco production is confined to purchases made by the Trinity Refining Company, owner of a skimming and cracking plant at Gladewater. Talco Pipe Line Company, only purchaser, is delivering its takings to the above concern, as is W. B. Hinton et al, owner of the discovery well.

Talco Pipe Line Company has a posted price of 60 cents per barrel at the well, but charges producers 7½ cents per barrel for gathering the oil and transporting same to its rack. This yields a net return of 53½ cents per barrel at the well. Humble Oil & Refining Company is paying royalty owners 60 cents per barrel, but is not a buyer, and all of its production is being stored in two recently completed 55,000 barrel tanks, pending the completion of Humble Pipe Line Company's 8-inch line from Talco to Longview, where it will tie into a 10-inch carrier that delivers Van oil to Baton Rouge, Louisiana. Humble Pipe Line Company is credited with having started work July 27 in laying highway crossings and clearing right-of-way for its proposed 65-mile pipe line extension, but does not plan to have the line ready for service until about November 1, according to reports.

Lower Trinity

TO GET EARLY TESTING BY SEVERAL EAST TEXAS WELLS

Tyler.—Exploration of horizons underlying the Trinity series in East Texas is now in prospect. Several tests that have reached the lower section of the Trinity are scheduled to make a try for production below the Trinity, which has never been completely penetrated in the East Texas Woodbine sand belt. The Paluxy, or first sand member of the Trinity has come in for considerable attention since the first of the current year through the discovery of commercial oil production at Talco and Sulphur Bluff, while the Glen Rose lime member of the lower Trinity is productive at Rodessa and in a single gas and distillate well at Cayuga. Sand and lime series underlying the Trinity have been recognized by geologists as potential sources of production, but operators have heretofore lacked the pioneering spirit in determining the production value of this unexplored region.

Pure Oil Company's W. H. Faulkner 1, wildcat on the Mount Enterprise faulted structure in southeastern Rusk County, promises to be among the first to drill through the Trinity. Drilling was in progress late last week in hard gray sand formation at 7695 feet in the Travis Peak section of the basal Trinity. Top of the Travis Peak was reported at 7323 feet, or 6760 feet below set level. First massive

anhydrite was logged at 5945 feet. Cores recovered in the Travis Peak have yielded evidence of petroleum under ether treatment. The company holds lease on a 12,000-acre block surrounding the deep test, and is scheduled to drill to 8500 feet.

Adequate financial support has been gained by Jas. A. Forester et al to resume drilling shortly on J. F. Woodward 1, situated 1½ miles east by south of Minter, Lamar County, after having been idle for several months in lower Trinity at 4516 feet. Owners plan to drill through the Trinity. Anhydrite was logged at 3735-4105 feet, with an elevation of 402 feet.

Sub-Trinity test is scheduled to be made by Earl G. Colton, R. P. Lester et al's Barrow Bros. 1, northeastern Kaufman County wildcat, which was drilling in hard lime at 4975 feet, according to late reports, after encountering salt water in Paluxy sand at 4775-4793 feet. Top of Paluxy series was called at 4742 feet, with an elevation of 528 feet. Owners have contracted for a 6000-foot test, but have indicated that the test will be carried beyond this depth if necessary.

Thickness of the Travis Peak zone is likely to vary at different points in the East Texas Woodbine belt. Tide Water Oil Company and Seaboard Oil Corporation's L. A. Wills 21-A, Trinity producer at Cayuga, penetrated 1095 feet into the horizon in drilling to 9085 feet before orders were issued to plug back and complete in the lower Glen Rose lime.

Gulf Oil Corporation's Mary J. Ross 1, first deep test for the Camp Hill structure, Anderson County, was drilling in upper Glen Rose at 7150 feet, according to late reports. First anhydrite section that separates the upper and lower Glen Rose is due within the next 600 feet.

Tide Water Oil Company and Seaboard Oil Corporation's J. N. Edens 15, second Trinity test for the partnership at Cayuga, logged first Glen Rose between 6040 feet and 6050 feet, according to E. B. Stiles, geologist stationed at the well. This marker correlates 147 feet lower than the discovery well. Drilling was in progress below 6300 feet.

Initial pumping test was due to be taken late last week on Dilworth S. Hager, W. P. Luse and Russ Petroleum Company's J. E. Worsham 1, discovery well of the Sulphur Bluff area, Hopkins County. The well averaged 40 barrels daily by heads, flowing through tubing with rods and working barrel in place while awaiting completion of the installation of standard rig pumping unit. Production is from Paluxy sand series at 4467-4500 feet, with an elevation of 442 feet. The partnership resumed drilling on Worsham 2, located about 1100 feet southwest of their discovery producer, after cementing surface pipe. Other lease owners in the immediate area have deferred the starting of projected tests to observe the results of the pumping operation. A. T. and J. C. Johnson, Sulphur Springs, and associates have been given permit to drill J. F. Irvin 1, situated on 40-acre lease, D. Fuller Survey, and on a favorable trend from the Sulphur Bluff producer, but have not completed financial arrangements.

In northwestern Houston County, Walter L. Goldston, Houston, et al's B. W. Burns-Humble 1, Juan de la Reviere Survey, were due to reach the Woodbine sand horizon late last week, having drilled to 5650 feet. Top of Austin chalk was placed at 5311 feet, according to paleontology, with an elevation of 255 feet, and base of chalk was called at 5631 feet by driller.

Operations have been started by J. S. Abercrombie Company, Harrison Oil Company and Hogg Brothers, all of Houston, on a Woodbine sand test on the C. M. Terrell 220-acre tract, Abner Hill Survey, about 4½ miles southeast of Paris, Lamar County. Location is in the northwest corner of the tract. These operators hold lease on a block of 46,000 acres, and expect to drill through the Woodbine to the Georgetown lime.

In Red River County, J. S. Abercrombie Company and Harrison Oil Company's Southern Pine Lumber Company 1, D. D. Bruton Survey, has been abandoned as a junked hole in lower Trinity at 2292 feet, with an elevation of 407 feet. Favorable oil saturation was found in sand cores taken at 2104-10 feet, but only a scum of oil with salt water resulted from drill stem tests.

47 NEW WELLS

Tyler, Texas.—Majority of the completions credited to the East Texas field the past week were on leases operated by majors, who have been completing fewer wells than the independents for some months. Completions for the week totalled 47, including four dry holes, and 26 of the total were drilled by majors.

Volume of active operations in the field has been fluctuating in recent weeks, but each threatened decline is followed by an upturn in drilling. Late survey reveals that there are 95 rigs in active service and 60 standing idle on incomplete tests, while other field work provides an aggregate of 219 operations.

The proration schedule was not changed for the August period, although production allowable of the field has gained 6101 barrels since the quota of the field was reduced June 21. On July 28 there were 21,064 producers, including 15,983 wells in the marginal class, with an allowable of 433,472 barrels daily, according to records of the Texas Railroad Commission. On the above date the enforcement body also listed 66 accounted for dead wells.

The current list of completions includes nine producers that will not flow natural, and will be equipped for pumping.

McCAMEY SPACING

Austin.—The Texas Railroad Commission July 31 promulgated an order for a 10-acre spacing pattern in McCamey field of Upton County.

By a "gentleman's agreement" a 10-acre pattern had been in effect in the field since its discovery; but recently one operator had said he wanted to drill closer than that. Operators then come to the commission with a request for a formal order.

Cisco, Texas.—M. O. & P. Refining Company has been formed to take over the Walton Refining Company Inc.'s 500-barrel capacity crude skimming plant here, and has resumed operations. The new owners are processing high gravity crude produced in the Leuders field, Jones County, and deliveries are made by tank trucks.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
E. T. DeArman et al, K. Crook 1-B (225-ac)	225	3635
E. T. DeArman & Bauman, J. Rettig 5 (100-ac)	30	3637
Gulf, W. P. Keeling 6-A (53-ac)	8000	3800
Humble, A. D. Blackwell 49-A (325.79-ac)	5400	3635
Alex McCutchin et al, A. S. Jarvis 7 (89.84-ac)	2400	3727
M. H. & Jim McMurrey, Tucker Davis 1 (40-ac)	*	3640
Overton Ref. Co. (was J. B. Sneed), E. Rollins 6 (72-ac)	500	3665
Sinclair Prairie, Mayfield 70-A (374.74-ac)	4600	3783
Stanolind, H. C. Maxwell 27-A (108.52-ac)	8000	3793
Sun, H. Schuyler 6-A (50-ac)	4600	3673
The Texas Co., A. S. Jarvis 18-A (161½-ac)	7000	3614
KILGORE AREA—		
Arkansas F. O. Co., C. Brown 15 (100-ac)	10,000	3634
J. Beren et al, A. Holt-Shell 8 (69.17-ac)	144	3666
Gen'l American Oil Co., (Hurtle), Wm. Sexton 15 (100-ac)	300	3563
Gulf, Fred Birdsong 16 (98.42-ac)	7200	3579
W. V. Hardin et al, Neal Peterson 5 (104-ac)	300	3598
Humble, J. N. Peterson 41 (222.1-ac)	8700	3629
Magnolia, N. Utzman 2 (87½-ac)	120	3473
Murko Oil & Roy. Co., H. P. Hale 4 (80-ac)	50	3524
Sinclair Prairie, S. G. Andrews 34 (200-ac)	6800	3454
T. L. Wynne, Tr. (Utex Oil Co.) Sabine River 13, Tr. 8 (85-ac)	630	3478
LONGVIEW AREA—		
Arkansas F. O. Co., Bun Rodden 3 (36.9-ac)	10	3637
Ben G. Barnett et al (Stanolind-Falcon), G. Cannon 1-B (40-ac)	600	3692
Davis & Hart, R. H. Brawley 1 (178.23-ac)	*	3864
Empire O&R Co., Joe Bander 17 (93.17-ac)	9600	3607
FHE Oil Co.-Fleming-Kimbell Corp., Flemister 12 (45-ac)	7600	3625
Gen'l American Oil Co., L. T. Mackey 1	500	3758
Turner Payne 1 (1-ac)	*	3615
Gulf, M. O. Sheppard 43 (335-ac)	8200	3508
Humble, Jesse Phillips 12 (77.6-ac)	5800	3648
Dr. W. D. Jones-Saxet Oil Corp., L. B. Miller 1 (37-ac)	1000	3775
L. B. Miller 2 (37-ac)	500	3741
Kewanee O&G Co., Fee 25 (168.77-ac)	11,000	3630
L. & G. Oil Co.-M. H. Crawford, M. E. Alexander 1 (34-ac)	360	3622
Magnolia, H. B. Ziegler 18 (120.62-ac)	9300	3461
Joe A. Papadakis et al, Mrs. C. B. Hailey-Beard 1-A (50-ac)	*	3998
P. H. Pewitt et al, J. H. Sobey 1-B (15-ac)	3000	3695
Shell, Guthrie Jones 11 (43.52-ac)	7800	3570
Sinclair Prairie, W. H. York 11 (86.45-ac)	8100	3597
W. H. York 12 (86.45-ac)	7500	3590
Stanolind, Cox-Hamon 11 (72.68-ac)	8400	3503
Stuckey-Thrasher 19-B (80-ac)	9000	3580
Stanolind-Atlantic-Sun, M. Hays 13 (102.63-ac)	11,000	3578
Stanolind-Tidal-Conoco, Flewellen 20-C (400-ac)	6000	3702
Sun, A. B. Mackey 3 (44.67-ac)	600	3727
Sun-Seaboard Oil Corp., J. W. Akin 23 (163.4-ac)	9300	3599
Tide Water-Frank Buttram, Nicholson 22 (800-ac)	750	3690
ANDERSON COUNTY (Cayuga Field)—		
Tide-Water-Seaboard, Lutterloh 3 (601.57-ac)	2200	4038
FRANKLIN COUNTY (Talco Field)—		
McAlester Fuel Co., A. M. Crawford 6 (25.23-ac)	960	4306
TITUS COUNTY (Talco Field)—		
H. B. Ownby Drlg. Co., J. F. Barton 1 (4.8-ac)	445	4294
WILDCATS		
HUNT COUNTY—		
City of Celeste, Water Works 2	*	1820
RED RIVER COUNTY—		
J. S. Abercrombie Co.-Harrison Oil Co., Southern Pine 1 (392.37-ac)	†	2292

*Failures; †Junked; ¶Million cu. ft. gas.

Cores Saturated

GAINES COUNTY MAY GET ITS SECOND PRODUCING WELL

WEEKLY STAFF REPORT

Midland.—Lime cores carrying oil and gas taken from Humble Oil & Refining Company's Wales Eubank 1, C SW SW Section 6, Block "AX," PSL Survey, Gaines County, enhances the prospects of this wildcat becoming the second oil producer in the county. The showings were recorded at 4798-4816 feet, with an elevation of 3365 feet. Drilling was in progress late last week at 4850 feet, or 900 feet below the top of the Brown lime marker. It is about eight miles northwest of Landreth Production Corporation's Kirk 1, which was temporarily completed late in June after acidizing at 4820 feet with an initial yield of 107 barrels daily on swab. The latter was deepened to 4870 feet, or 1599 feet sub-sea, but showed water after swabbing and bailing 100 barrels oil in 16 hours. The hole has since been plugged back to 4855 feet, and will be shot.

In Yoakum County, Bahan Rhodes and Fitzpatrick's Henard 1, C SW Section 367, Block D, J. H. Gibson Survey, was drilling below 5200 feet after recovering lime core at 5188-5195 feet that carried an odor of oil. This wildcat should reach a decisive depth during the current week.

On a separate prospect to the northeast, Lou Stogner and Elliott Roosevelt's Goggins Roosevelt 1, Section 215, Block D, was logging anhydrite formation while drilling at 4100 feet.

A new oil pool opened in June to the east of the McCamey district, Upton County, scored its second producer last week when Cordova-Union Oil Corporation's Fee 1-A, SWc NE Section 19, Block 1, MK&T Ry. Survey, pumped 286 barrels initial after acid treatment in lime at 2096 feet. It is an east offset to Brewer and Smith's Cordova 1, which opened the pool with an initial pumping gauge of 375 barrels at 2072 feet, and later the well and 80-acre lease was sold to F. W. Merrick, Inc., Ardmore, Oklahoma, for $40,000 cash.

The McCamey district's dolomite lime area has become very popular with independents in recent months and a big gain in field work has occurred by reason of new entrants pushing developments in the older sections of the district. International Petroleum Corporation is credited with having contracted to purchase Hope Petroleum Company's J. F. Lane 80-acre lease embracing the E½ NW¼ Section 36, Block 1, MK&T Ry. Survey, with five pumpers for $100,000 cash.

R. H. Gill and associates have succeeded in selling protection acreage to several majors against a projected 5000-foot wildcat to be drilled at center of NE¼ Section 15, Block A-45, PSL Survey, central Andrews County, and on a line between production in the Ogden, Parker and Means fields. J. W. McMillan et al plan to start operations shortly on J. E. Parker 1, located 660 feet south and east of the SWc of Block A-43, PSL Survey, Andrews County, and on the Jas. Hobe-

To Repressure

JONES COUNTY OWNERS PLAN COOPERATIVE UNIT

Abilene, Texas.—N. H. Martin & Son, Wichita Falls, and E. A. Ungren and A. J. Frazier, Abilene, plan to erect a two-unit compressor station to repressure their adjoining properties in the Hawley field, Jones County, with natural gas. The two concerns are among the largest property owners in the field, and have available about 750,000 cubic feet of gas daily from flowing wells in the 2200-foot Hope sand pay to be utilized in maintaining pressure in the 1950- and 2050-foot oil zones.

The Hawley field has been one of the most attractive areas in West Central Texas during the past six months, with three distinct pay zones to shoot at. Development has been greatly retarded by an inadequate market for the prorated allowable assigned the field. Wells completed in the 2200-foot, or lower sandy-lime pay, have a top allowable of 90 barrels daily regardless of their potential. First production was developed in July, 1930, by F. E. Shaheen and Prairie Oil & Gas Company (now Sinclair Prairie Oil Company et al's) S. W. King-Dorsey 1 rated as a 50-barrel pumper from sand at 1994-1999 feet. The new owner recently deepened this old producer to the Hope pay at 2210-2213 feet, and the well flowed 120 barrels of high gravity oil per hour through 5 3/16-inch casing. It is on the northwest edge of the main field, and points to further extensions.

Pampa, Texas.—Crude stocks in the Texas Panhandle were reduced 307,550 barrels, or at rate of about 10,000 barrels daily, during June. The total for the district at the close of the month amounted to 11,600,000 barrels, having declined 1,028,590 barrels since February 1, 1936. Stocks piled up during January at rate of 3427 barrels daily, but withdrawals have been continuous since the first month of the current year.

WEST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CROCKETT COUNTY—		
The California Co., Shannon 8, Acct. 3	343	2530
CRANE COUNTY (McCamey Field)—		
M. F. Turner-Dan Easter, Hughes-Stanolind 2	411	2415
ECTOR COUNTY (North Cowden Field)—		
Landreth Prod. Corp., TP Land Trust-Amerada 2-B	840	4257
Stanolind, J. M. Cowden 34	675	4283
Sun Oil Co., L. E. Wight 7-A	835	4275
ECTOR COUNTY (Goldsmith Field)—		
Landreth Prod. Corp., Scharbauer 1-B	361	4230
HOWARD COUNTY—		
Conoco-Group 1 Oil Corp., Overton 10	1256	2466
Ennisbrook Oil Corp., Rhotan 10	528	2780
Sinclair Prairie, J. P. Davis 3	440	2826
L. C. Denman 5-B	236	2820
JONES COUNTY—		
Sandy Ridge Oil Corp., P. Jones 5	147	1962
PECOS COUNTY (Pecos Valley Field)—		
Union Oil & Mining Co.-Messenger, J. W. Potts 1	40	1770
PECOS COUNTY (Torborg Field)—		
Cardinal Oil Co., Smith-Cornell 10-A	253	340
PECOS COUNTY (Yates Field)—		
M. D. Bryant et al, State-Strip 1 (11.44-ac)	62,472	1267
SCHLEICHER COUNTY—		
Cardinal Oil Co.-Rowan-Nichols Oil Co., Whitten 1	*	4065
UPTON COUNTY (McCamey Field)—		
Falvey & Smith, Reese-Conoco 2	821	2216
Fensland Oil Co., King Ranch O&L Co. 2	204	2167
T. B. Knox et al, Cordova Union 1	*	2275
TP Coal & Oil Co., J. F. Lane 14-C	194	2325
WARD COUNTY—		
California Co., A. B. Gordon 13	425	2525
S. Caprito et al, E. Beatty 2	370	2507
Eastland Oil Co., K. Green-Sun 4	204	2455
FHE Oil Co.-Atlantic, C. Killough 2	390	2367
S. J. Rixford et al, K. Green-Sun 5	138	2463
Sinclair Prairie, Frank Carnegie 2	81	2339
G. P. Hill 3	447	2535
WINKLER COUNTY (Sayre Field)—		
Humble, J. F. Howe 11	760	3000
J. C. Maxwell, Inc., Gar-Tex O&G Co. 2	1639	3111
Shell, Ida Hendrick 1-L	789	3166
Sinclair Prairie, J. B. Walton 4-B	1178	2980

*Failures; †Junked; ‡Million cu. ft. gas.

lis Survey, Block 111, Andrews County. It is located a short distance southwest of production in the Fuhrman field. Shell Petroleum Corporation and Llano Oil Company donated one-fourth interest in their lease on Block 111 to obtain this test, and The California Company is reported to have agreed to give $10,000 in dry hole money, but in the event of production the sum will be returned from oil sales.

Grisham-Hunter Corporation, Abilene, and associates are approaching decisive depths on two of a trio of wildcats situated within a radius of 6½ miles and centering upon northwestern Ector County and southern Andrews County. Tests on the R. B. Cowden land, Ector County, have made the best drilling progress. Cowden 1, C NW SW Section 10, Block 45, T-2-N, was drilling in lime below 3900 feet, and Cowden 2, C SE Section 8, situated 1⅜ miles to the west, was drilling in anhydrite below 3600 feet.

OPEN FOX WELL

Ardmore, Okla.—The original Ordovician discovery well, Carter Oil Company's Williams 1, SW NE SW 27-2s-3w, deep test in the Fox pool of Carter County, was opened July 30, blowing out 225 barrels of 46 gravity oil in one hour through 2½-inch tubing. Production was accompanied by 18,000,000 cubic feet of gas. The oil is coming from 8105 feet, at which depth the well was shut down several months ago.

Williams 1 came in October 10, 1935, at a total depth of 8088 feet, and production at that time was estimated at between 10,000 and 15,000 barrels daily. Tools were stuck in the hole after the flow was mudded off, but production was killed as a result. A plug was forced back to 6858 feet, where the hole was redrilled.

G. L. KOTHNY, vice president and general manager of Sperry-Sun Well Surveying Company, is leaving August 12 on the SS. Deutschland, on a trip to Austria, Holland and England. He will return to the United States late in September.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Herrogan Oil Corp., McConnell 1-A	465	3417
GRAY COUNTY—		
Danciger O&R. Inc., McLaughlin 3	†	2688
Warner Oil Co., D. G. Parker 1, sec 18	*	2880
HUTCHINSON COUNTY—		
Benonine Oil Co., W. F. Starnes 1-B	438	3191
Gulf Oil Corp., H. C. Pitcher 6	302	3178
Simpson Oil Co., C. S. Terry 1	409	3092
Skelly Oil Co., E. E. Watkins 2	655	2935
Harry Stekoll et al, Whittenburg 5-D	262	3052
Belle Wisdom 1	195	3133
MOORE COUNTY—		
Anderson-Kerr Pet. Co., Wilbar-Gulf 2	¶68½	3110
Texas Interstate P. L. Co., Thompson 1	¶28	3355

*Failures; †Junked; ¶Million cu. ft. gas.

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NORTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, K. Ahrens 1, sec 127	*	1050
T. B. Wilson 1	10	1620
C. B. Christie et al, L. F. Wilson 6, blk 14	71	1610
Golding & Cochran, B. O. Watson 1, blk 6	*	860
Huggins Oil Co., Ford 15	*	1124
Jennings Pet. Co., E. V. Pearston 3, blk 120	*	1190
C. B. Long et al, Turbeville 13, blk 156	20	1516
J. T. Miller et al, J. F. Rogers 1, sec 2407	*	1504
W. B. Omohundro-Pet. Prod. Co., H. Osterman 1, sec 24	*	2007
Phillips & Healey, White 4	*	700
COOKE COUNTY—		
Anderson-Kerr Pet. Co., S. M. King 2	620	2019
Benton & Holmes, T. Hildebrandt 1	*	2508
Burk Roy Co., et al, O. Nickles 1	*	2214
Joseph Oil Co., Wm. Bergman 1, blk 20	*	1978
Mudge Oil Co., Johnson 15	15	1120
Seitz-Comegys & Seitz, Inc., Trew 16-A	110	1224
Trew 17-A	10	1076
JACK COUNTY—		
Josaline Prod. Co., M. E. Hester 2	25	3035
R. C. Knott et al, C. Webb 2	*	3780
Perren & Gillespie, Nora Kee 2	442	3018
MONTAGUE COUNTY—		
Arco Oil Co., M. Salmon 4-E	10	1719
Conoco, E. W. Johns 1	349	2084
T. W. Eason & Grisso Roy. Corp., E. A. Jordan 1	*	4007
WICHITA COUNTY—		
John L. Bostic et al, J. H. Mariott 12	*	1967
Coleman & Coppock, G. R. Hodge 4, blk 39	4	818
F. P. Cullum et al, Burnett 3, sec 4	*	700
Fain-McGaha Oil Corp., E. Kempner 1, blk 16	*	1802
Hawkins & Thweat, J. L. Jackson 2-A, blk 16	*	720
Tom B. Medders et al, S. W. Wigley 1	*	1406
Geo. B. Ray et al, Robinson 3, blk 310	60	1920
Robinson 1-B, blk 310	40	1923
J. M. Seaberry et al, G. P. Meade 1, sec 15	*	700
Waggoner Ref. Co., Waggoner Est. 10-AA, blk 149	50	1602
WILBARGER COUNTY—		
Fain-McGaha Oil Corp., Waggoner Est. 10-Y, sec 43	65	2410
YOUNG COUNTY—		
Bohner & Watson, Prideaux 4, blk 16	8	511
Duncan et al, Benson 15, sec 1391	150	910
W. F. Hamilton et al, Edwards 1, sec 2447	*	1257
Hinson & Tidwell, S. D. Thompson 1, sec 427	1200	3940
J. E. McDonald et al, Jeffery 3, sec 58	199	838
Will McKemie et al, F. M. Cullers 8, sec 2	*	580
F. M. Cullers 9, sec 2	*	656
Pemete Oil Co., Benson 13, sec 1451	35	884
Benson 14, sec 1451	20	925
R. Campbell 1, sec 1483	*	960
R. E. Skinner et al, C. B. Daniels 1, sec 421	*	555
Solo Oil Co., O. Deitrich 5	30	1103
R. J. Watson et al, Larrimore 2-A, sec 253	*	610

*Failures; †Junked; ¶Million cu. ft. gas.

Motor vehicle registration fees and related levies cost American motorists the sum of $322,776,536 in 1935, in addition to state gasoline taxes which cost $616,851,671 and federal gasoline taxes costing $172,262,483. The total cost of these levies, although representing only a part of the entire automotive tax bill, was $1,111,890,690.

Nueces Leads

COUNTY'S 12 WELLS HAVE LARGE INITIAL

WEEKLY STAFF REPORT

San Antonio.—Nueces County led in quantity of new production provided during the week despite the fact that it did not show the largest number of completions. There were 12 oil wells in this area flowing an estimated 6163 barrels of oil per day. Duval County with 13 producers showed initial production of 4053 barrels and Webb County with four wells showed initial production of 2165 barrels. There were 6 producers in all other counties of South Texas, their initial production totaling 1642 barrels.

The total number of completions for the South Texas district during the week was 69, of which 35 were oil wells producing 15,033 barrels, 6 gas wells making 107,000,000 cubic feet of gas and 18 failures.

Production Extended

Minor extensions were provided to several Corpus Christi district fields, while other wildcat wells were holding considerable interest due to their critical depths.

Buckingham Oil Company's McCampbell 1, which opened the Aransas Pass field, Aransas County, has been placed on regular production, flowing 2½ barrels per hour through ⅛-inch choke and showing pressures of 2250 pounds on tubing and 2575 pounds on casing. The gas/oil ratio is high, although no gauges are available. The production is coming from the Marginulina at 6539-54 feet. Atlantic Oil Producing Company's test ¼ mile to the southwest is drilling near 5000 feet in sidetracked hole.

Mills Bennett's J. K. Ordner, 3700-foot west extension to the Saxet field, finally has been completed through perforations at 4078-82 feet, showing tubing pressure of 1600 pounds and casing pressure of 1800 pounds. The well will be killed and the sand recored in an effort to bring about oil production.

The 5800-foot district on the west side of this field continues to be the hot spot of development, with a number of excellent producers being added during the week. Other sands, likewise, are receiving development.

Parker, Foran & Knode added a little acreage to the southeast side of the Agua Dulce field through completion of J. C. Ingram 1, estimated at 100 barrels of gasoline and 20,000,000 cubic feet of gas per day through 7/64-inch choke showing tubing pressure of 1650 pounds and casing pressure of 1750 pounds.

About 2½ miles southwest of this field, Texon Drilling Company is making hole below 6285 feet in Mable Eliff 1. It is a key well for this district and is being closely watched as a possible extension to this producing area.

O. W. Killam's Betty Ellick 2, south end of the Clara Driscoll field, showed a high gas/oil ration through perforations in a portion of the sand at 3781-3805 feet and the well has been killed to reperforate. First the well blew out and ran wild, showing a large volume of oil, gas and salt water from this level.

After developing salt water in the 5541-foot sand, Plymouth Oil Company has plugged back Welder 2-D, the result being about the same amount of water in the 5400-foot horizon. It is southeast of the Sinton field, San Patricio County.

Several important wildcats through San Patricio-Refugio trend are being closely watched due to their critical depths, although none of them have encountered interesting sands. The Frio sand production in the fields of these two counties was further increased during the week with new completions at depths ranging from 5600 to 5900 feet.

Calhoun County Wildcats

From a wildcatting standpoint, Calhoun County rapidly is acquiring the key position. Continental Oil Company's heaving shale prospect is ready to drill ahead from 8724 feet with 6½-inch casing. Northeast of this well, Hiawatha Oil Company (Benedum & Trees) has commenced Roemer 1, an 8000-foot test.

In the Heyser district, Calhoun County, Humble Oil & Refining Company and Plymouth Oil Company's E. H. Welder 2, 1¼ miles west of the discovery, made a high gas/oil ratio at 5473 feet in the regular level. It has been deepened to test the 5800-foot sand encountered in P. H. Welder 1, about a mile to the southeast, which showed oil and salt water.

Stanolind Oil & Gas Company's J. J. Thompson 1, one mile south of production in the Bentonville-King district of Jim Wells and Nueces counties, plugged back from 5705 feet and per-

Port Expanding

CORPUS CHRISTI CRUDE OIL SHIPMENTS INCREASE

Corpus Christi.—Further expansion of the Corpus Christi crude export business is assured with the announcement of another oil dock, a new pipe line and additional loading facilities. The new dock will be located in the southwestern corner of Avery Point, the second and most westerly of the turning basins in the ship channel.

Simultaneously with the above announcement, Southern Pipe Line Company awarded contract for the construction of a gathering system, in the deep area of the Saxet field, Nueces County, field storage facilities, 6⅝-inch pipe line to a storage terminal at the proposed port. Southern Pipe Line Company is affiliate company of Southern Minerals Company.

The new pipe line will commence at a point near the Clarkwood townsite and will be about 8 miles long. It will have a capacity of 14,000 barrels per day. Two 20,000-barrel steel storage tanks have been commenced at the originating point of the line and two 93,000-barrel and one 20,000-barrel tanks will be constructed immediately at a terminal at Avery Point.

Continental Supply Company has the contract for the pipe, which is being shipped from the mill by water. Construction contract has been awarded to Brown & Root, Inc., while the storage contract has been let to the Wyatt Metal & Boiler Works.

Application has been made by the Nueces County Navigation District for the construction of the new docks. The project will be 133 feet long, 20 feet wide and top about 10 feet above the mean low tide. It will be parallel to the shore line. The dock will be able to accommodate as many as 30 tankers per month, an estimated 2,000,000 barrels of oil.

There are two other oil docks in the main Corpus Christi turning basin, which have been taxed to capacity as a result of recent pipe line construction.

Bids are being received for the dredging of approximately 3,100,400 cubic yards from government-developed waterways in the Corpus Christi area. They will be opened August 24. The plans call for the dredging of the inner basin at Port Aransas, the channel extending from that point to Corpus Christi, the maneuvering and turning basin at Corpus Christi, the industrial canal and the turning basin at Avery Point.

Of particular interest in the expansion of this port is the source of market for the crude being shipped. Large quantities are being exported to foreign points on regular contracts. The greater part of this oil is a low gravity product, but is fine Diesel and fuel oil. Southern Pipe Line Company, however, has made a contract for foreign export of high gravity oil from the deep sand in the Saxet field, this contract being for a period of years.

forated casing in the 4000-foot sand where it was completed as a gasser. This sand is covering an unusually large area. On the west side of the same field, this company plugged back Frame & Bowers 1 from 5425 feet to the 4000-foot sand, where casing will be perforated and the well completed as a gasser.

DEEP WILDCATTING
Interest in Valley area is being continued

Mission.—Despite the fact that little encouragement has been obtained, the Rio Grande Valley sector of the Gulf Coast continues its deep wildcatting campaign with additional new prospects being announced.

Shell Petroleum Corporation's Yturri Land & Cattle Company 1 in Willacy County, is coring below 7265 feet, the last showing being at 6735-56 feet. Magnolia Petroleum Company has been blocking acreage north of this prospect with the most recent acquisition being 7721 acres for an announced consideration said to be in excess of $40,000.

On the Alta Mesa prospect in Brooks County, California Company's Garcia 1 drilled to 8022 feet, drill stem stuck and the hole was plugged back to 3030 feet and perforated at 3020-28½ feet, where it showed water with a skum of oil. It was recemented and perforated at 3024-27½ feet and tests are continuing.

McCollum Exploration Company has started moving in materials for R. E. Harding 1, in Lot 11, Block 94, Mestenas Grant, 850 feet west of Quintana Petroleum Corporation's Engelman 1 which was abandoned at 8893 feet after drill stem was stuck. The well showed several sands above this level but the hole could not be reconditioned to test. It is one of the key geophysical prospects in Hidalgo County. Northwest of the above well in the Mestenas field, Gulf States Development Company's John Engelman 3, east of the discovery, is cleaning through perforations at 6688-92 feet, showing distillate, mud and drilling water. It is showing pressures of 800 pounds on tubing and 1500 pounds on casing. This well has been trying to complete for weeks.

Union Sulphur Company's American 10, 4500 feet northeast of the Mercedes field, is drilling below 3650 feet. American 8, in the field, is jetting some 41 gravity oil from 7530-50 feet, where casing was perforated.

Several active operations have been started on the northeast side of the Samfordyce field in search of the new 2800- and 2900-foot sands which have been proved productive. This new development promises to revive work in this district.

Killam & Staggs are adding about one mile to the producing area in the new Placeta field in Starr County. The well is Sanford Ricaby 1, 3407 feet south of Highway 4 and near the west line of Porcion 83. It drilled to 1048 feet, set casing at 1033 feet and will perforate at 977-93 feet to complete as a gasser.

John Clopton et al's Bennett & Roos 4, Lot 5, Clopton subdivision, 2000 feet north of the discovery well of the Santo Domingo field, Starr County, is drilling around 1000 feet.

Two Extensions

DUVAL COUNTY WORK PROSPECTS ARE BOLSTERED

Laredo.—With two major extensions apparent, Loma Vista field looms as Duval County's next source of an active drilling campaign. Loma Novia, Seven Sisters and Hoffman fields rapidly are reaching their limits and reduced work is anticipated. The recent extensions of the Lopez field into Duval County and the development of oil in the Peters field, will aid Loma Vista in keeping work at a steady high level.

Shell Petroleum Corporation's J. F. Welder Heirs 1-B, 1½ miles northwest of the Loma Vista field, drilled to 3242 feet in shaley gray water sand, ran an electric formation tester and is preparing to plug back and complete at 2861-72 feet. Pan American Production Corporation's Welder 1-H, 1 mile southwest of the field drilled to 3006 feet, plugged back and cemented casing at 2822 feet. The cement job failed and it has been recemented.

Another wildcat holding interest is Conservative Oil Company's Duval County Ranch Company 2, 2 miles southeast of the Colemena field, is drilling plugs after setting casing at 1543 feet. It had a saturated sand at 1543-54 feet. This well is 660 feet northwest of the first well which showed oil and salt water in the same sand. This is the Cole sand and is producing gas in the Colemena field.

Oil production in the Peters field was defined to the south when Shasta Oil Company and Highland Oil Company's W. R. Peters 1, 990 feet west line and 300 feet north line of Section 177, showed salt water in the Mirando horizon and was abandoned at 3100 feet. It is a south offset to Mills Bennett's Peters 3, an oil producer. Just west of Mills Bennett's producers, Windsor Oil Company's Peters 3-B completed as a gasser spraying oil, has increased its oil output and now is estimated at about 8 barrels per hour. Peters 4-B has been started one location to the north. About 1½ miles northwest of these producers and on the east flank of the Peters field, Tom Graham's S. Sutherland 1, Section 188, is in sand at 2342-51 feet, showing lots of gas and some oil and is coring ahead.

The new field recently opened by Rogers & Rogers' Pena 1 in the extreme southeastern corner of the county, has been named the El Mesquite field. The well is making a small amount of oil from the Cockfield.

E. R. Thomas et al's Atlee Parr, a new location on the Parr Ranch prospect northwest of San Diego, is moving in. It is in the southeast corner of Section 26. Two other wells have been drilled in the general area showing considerable oil around 4000 feet.

Humble Oil & Refining Company extended the Rhode field, McMullen County 1½ miles northeast when it completed Rhodes 2 as a gasser at 1731-36 feet. It has drilled to 3038 feet, plugged back to 1780 feet and set casing.

C. C. Shumway's Shiner Ranch 9, Section 51, McMullen County, which found saturation in the Government Wells sand at 1597-1625 feet, has been drilled ahead to 2014 feet and abandoned.

News Discouraging

BALCONES FAULT WILDCATS NOT HOLDING TO PROMISES

San Antonio.—Discouraging news comes from several of the Balcones Fault zone's most promising wildcats. Several others, however, are testing important showings to retain interest in this sector of South Texas.

Helvetia Oil Company's Susie Pratt 1, Garza Survey, one mile northwest of Anchorage in Atascosa County, is drilling around 2800 feet after failing to develop commercial production in the Taylor at 2249-2300 feet. It showed about five barrels of 44 gravity oil per day when swabbed.

Atascosa Trust's U. A. Doumch 1, northeast of this well and 3 miles north of Poteet, is coring for the top of the Edwards lime at 3956 feet and looking rather discouraging for production at that level. It did have shows in the Austin chalk and likely will plug back for tests.

L. M. Kniffin's Young 1, J. R. Miller Survey, southwest side of the Branyon field, showed sulphur water in the Edwards lime at 2349-51 feet, plugged back and will complete in the Georgetown at 2325-36 feet. This field is receiving quite a play due to its rather interesting small production in the chalk and intermediate horizons to the Edwards lime. Cargill et al's Damareau 3 made a small producer in the Edwards lime at 2235 feet, being depened from its former producing level in the chalk at 2188 feet. Lincoln Petroleum Company's T. H. Brown 1, set casing at 1871 feet and went to 2215 feet, taking in the chalk, Eagleford, Buda and Del Rio, being completed as a small pumper. About ¾-mile west of this field, Wheelock & Collins have a section of

Dale lime and serpentine from 1844-85 feet and are bottomed at 1970 feet in O. S. Alexander 1, and have set casing at 1840 feet. Plugs were being drilled.

H. B. Starkey et al's Francis-Brown-Cochran 1, 4 miles northeast of Luling and on the Ottine prospect, lost 4 joints of casing in the hole when attempts were being made to pull it. The packer failed to hold when production test was being attempted at 1747 feet.

New Bexar Field

Bexar County apparently opened a new shallow field with F. M. Shaver's Bitter 2, east of Macdona showing for a pumping producer. It drilled to 1324 feet in the Austin chalk, plugged back to 521 feet for a test at 476-521 feet. It pumped off the head of 21 barrels of 39 gravity oil and was continuing pumping tests.

Amerada Petroleum Corporation was completing a couple of wells in the Pearsall field. T. G. McWilliams 1, Tract 6, was deepened from 5565 feet to 5850 feet in Eagleford shale and was cleaning out after a shot with 435 quarts. It was showing a little oil. Amerada Petroleum Corporation's Arthur Michael 2 was shut in with no potential gauge having been run. It is at 5650 feet in chalk. C. A. Miller 1 is waiting on 3-inch drill-stem test before drilling ahead from 5435 feet for completion. W. H. Smith 3 is drilling at 5440 feet in chalk. It offsets a large producer. Nearly a mile west of the field, Termo Company of Texas' Arp 1, cleaned out after a shot at 5920 feet and is acidizing.

Eickenroht and Gallagher's O. H. Jahns 1, 3 miles southwest of the South Darst Creek field and in Guadalupe County, was bailing at 3204 feet after setting casing at 2739 feet. It was showing lots of mud cut with some oil and a little gas. The well topped chalk at 2920 feet, Eagleford, at 3081, Buda at 3122 feet and Del Rio at 3184 feet. The showing is believed to be in a crevice below 2920 feet.

FLOUR BLUFF

Austin.—A hearing in Austin August 14 has been called by the Texas Railroad Commission on the new Flour Bluff field in Nueces County. Field rules will be considered.

This field appeared on the schedules for first time in August, with an initial allowance of 135 barrels.

BEE COUNTY

Beeville.—The new Voss field of Bee County attained a much brighter outlook as R. B. Swiger's C. A. Voss 1-A cored the sand at 3989-97 feet, considerably higher than the discovery well. It is in process of completion. The well is 660 feet north and 660 feet east of Devonian Oil Company's discovery producer.

As a result of the second producer, work of developing this new producing area likely will get under way at once.

Claude Morgan et al's Maetze 1, important wildcat in the Fannin area of Goliad County, continued to core below 5500 feet after passing through several interesting sands. It topped the Fayette at 4160 feet, Cadell at 5066 feet, and the Diaboll at 5210 feet. South of Goliad on La Bahia prospect, Zeni Oil Company's M. Lutenbacher 3 is coring for the deep sand at 5562 feet, where it is showing shale and sand streaks. It showed lots of gas, but little oil below casing at 5352 feet in the Pettus sand. The new depth is about the top of the Conroe sand.

In Bee County, Pressy et al's Hicks 1, being completed in the Hockleyensis, is showing considerable gas and is running tubing for a production test. It bridged and the tubing is being run preparatory to washing out the bridge.

Adolph Douvre's attempt to open a deeper sand in the Three Rivers field of Live Oak County failed. San Antonio Joint Stock Land Bank 1 was drilled to 2002 feet, tested salt water through perforations at 1808-15 feet and again at 1792-93 feet. It has been abandoned.

HUMBLE NEW OFFICES

San Antonio.—Humble Oil & Refining Company is completing the centralization of its offices for the South Texas District in Corpus Christi. A. O. Behling is division superintendent; W. K. Esgen, division geologist. W. L. Howard is in charge of Humble Pipe Line Company. The new offices are in the Nixon Building.

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARANSAS COUNTY—		
Buckingham Oil Co., McCampbell 1, commence cor lots 8 & 9, sec 41; lots 8 & 9, sec 42, McCampbell subd., James Orick sur, perf csg 6539-47 and 6551-54	¶10-250	7501
BEXAR COUNTY—		
Rentex Oil Co., Yturri 33, Jose de la Garza sur (Southton)	*	750
Shadrock Oil Co., W. Kohler 4, J. M. Baerrera sur No. 58 (Von Ormy)	3	680
CALDWELL COUNTY—		
Ogden & Reed, C. L. Lackey 1, Squire Damon sur (Dale)	*	2100
DE WITT COUNTY—		
L. W. Capps et al, H. Buchhorn 1, 330 ft nl and el of 211.1-ac tr, Susan V. Slade sur	*	4008
DUVAL COUNTY—		
Atlantic Oil Prod. Co., J. F. Welder heirs 5E, sec 102 (Seven Sisters)	575	2446
Mills Bennett Prod. Co., W. R. Peters 5, sec 178 (Peters)	375	2617
Bridwell Oil Co., Wm. Hubberd 8A, sec 71 (Loma Novia)	320	2744
Wm. Hubberd 7-C, sec 75 (Loma Novia)	245	2582
Gem Oil Co., J. B. Peal 1, sec 72, (Lopez)	¶7-50	2114
Gifford Oil Co., A. S. Roach 1, 990 ft sl, 2970 ft el sur 200	*	4355
Highland Oil Co., M. C. Hubberd 22, sec 72, (Loma Novia)	210	2754
M. C. Hubberd 30, sec 72 (Loma Novia)	260	2759
Humble, D. Ruiz 15, sec 553 (Loma Novia)	265	2745
Kaffie Lumber Co., Knoll 1, 1155 ft sl, 330 ft el of nw¼ sur 114	*	2559
Magnolia, DCRC 7, sec 95 (Piedre Lumbre)	275	1963
S. E. Harville 3, sec 64 (Government Wells)	25	2325
J. B. Peal 3, sec 383 (Lopez)	360	2141
Rio Bravo & Coates, W. R. Peters 2, 330 ft sl and el of n½ of sw¼ sur 398, 1 mi e Kohler gas field, pb to Cole sand	¶10	2884
Rogers & Rogers, C. & C. A. Cuellar 2, 330 ft nwl and nel of 100-ac tr, sur 117	*	2700
Rita S. De Pena 1, 3337 ft swl, 1306 ft nwl of R. S. de Pena plat, El Mesquite Trinidad Vela gr, sh 4 (El Mesquite)	25	2862
J. D. Sutherland 4, sec 120 (Hoffman) perf 2800	¶10	2926
Fred Shield, A. Hazelwood, sec 110 (Seven Sisters)	285	2503
The Texas Co., Hugo Wendt 44, sec 68 (Loma Novia)	805	2629
JIM WELLS COUNTY—		
Stanolind O&G Co., J. J. Thompson 1, 330 ft nl and wl of ne¼ sec "A", King Ranch subd (Bentonville) perf in 4000-ft sand	¶10	5705
LA SALLE COUNTY—		
Paul Meaders & Adair et al, D. C. Reed 1, 990 ft nl and el of sec 136, T. Conlan subd	*	4010
LIVE OAK COUNTY—		
Adolph Douvre, San Antonio Joint Stock Land Bank 1, 725 ft el, 150 ft nl, plat 27, tips subd, Richard Everett sur (Three Rivers)	*	2002
MAVERICK COUNTY—		
Thompson & Streeter, Joseph Wipff 1, 1800 ft sl, 330 ft wl of sec 18	*	2002
McMULLEN COUNTY—		
C. I. Jennings, Susie B. Regan 1, ab 16, Michael Haley original gr (Calliham)	*	1177
Loma Oil Co., L. Jacob 3-F, John Faddin sur (Jacob)	*	940
C. C. Shumway, Shiner Ranch 9, 330 ft nl and wl of ne¼ of sec 51, Shumway subd of Shiner Ranch	*	2014
MEDINA COUNTY—		
Chas. H. Wagener et al, Medina Irrigated Farms, sec 8-A, Hewitt sur 39	2	287
NUECES COUNTY—		
Conroe Drlg. Co., Rand Morgan 1-A, sec 415, (Saxet)	165	5825
J. K. Culton, J. L. & Frank Tribble 2, Villareal gr (Saxet Heights)	570	4090
W. F. Knode et al, J. C. Ingram 1, sec 9, Peters subd No. 2, Puenticitas gr (Agua Dulce)	¶20-100	4768
North Star & Morgan Gulf, Rand Morgan 1-G, B. S. & F. sur 403 (Saxet)	*	5450
Pan American Prod. Co., Rand Morgan 1-C, sec 405 (Saxet)	410	5829
Port O&G Co., Country Club Place 2, lots 26 & 27, Country Club Place	650	4091
Richardson Oil Co., M. P. Burke 1, E. Villareal gr (Saxet Heights)	*	4130
F. Quiros 3, blk 29, Sheppard Farm lots (Saxet)	1650	5846
Southern Minerals Corp., Frank Bliss 7, J. W. Stevens sur 406 (Saxet)	508	5828
T. H. Isensee 5, C. Land sur 404, (Saxet)	575	5828
F. J. Smith 7, blk 4, Sheppard Farm lots (Saxet)	235	4430
Westgate Oil Co., Sturm Estate 4, Villareal gr (Saxet Heights)	480	4085
Wynee Drlg. Co. et al, Rand Morgan 1, G. C. & S. F. sur 315	575	4449
Starr 1, blk 11, Bancroft Farm lots (Saxet Heights)	150	4077
SAN PATRICIO COUNTY—		
Centennial Oil Co., Chiltipin Creek 1, sec 71, Creek Bed tr 2 (Plymouth)	695	5612
STARR COUNTY—		
J. F. Anderson, Garcia 1, 450 ft n of nw cor sh 196, in sh 199, porc 90	*	1108
Ed Leach, Dana Estate 1, 2600 ft n of Rio Grande River, 700 ft wl of porc 84, Juris of Camargo, perf 963-75	¶5	1028
Skelly Oil Co., Seabury et al 10, sh 256, porc 38 (Samfordyce)	150	2804
TRAVIS COUNTY—		
J. Morgan Russell, Alna Milton 2, 150 ft wl, 1500 ft nl of 48-ac tr, Jennings sur	*	435
VICTORIA COUNTY—		
Commonwealth O&G Co., F. E. Parencia 1, blk 83, Brownson sur (Placedo), owdd, otd 4772	280	4776
Crown Central Pet. Co., F. Gebrauer 4, sec 9, SA&MG sur 304 (Placedo)	265	4784
WEBB COUNTY—		
Clopton & Hahl et al, S. Benavides 1, Hale subd, Arispe gr, blk 296 (Cole)	575	2879
G. G. Mortimer, F. L. Garcia 3-B, sec 112 (Lopez)	435	2243
Jesus Lopez 3, e½ sh 10B, sec 73 (Lopez)	575	2171
Superior Oil Co., W. C. Billings 12, sec 109 (Lopez)	580	2256
ZAVALLA COUNTY—		
Bay Oil Corp., Nat'l Bank of Commerce 1, 1320 ft wl, 930 ft sl of sec 43, blk "A", AB&M sur	*	7091
Leona Oil Corp., George West 1, 3490 ft nl, 330 ft el of C. Bustillo sur No. 1	*	6002

*Failures; †Junked; ¶Million cu. ft. gas.

Watch Five Tests

ONE FIELD FOUND; FOUR OTHERS LOOM IN COAST

WEEKLY STAFF REPORT

Houston.—Five wildcats held the interest of operators in the Texas sector of the Gulf Coast last week. Four of the wildcats were in oil sand at the end of the week and the fifth established a new field in Galveston County. Two were setting 7-inch casing to make production tests, while two others were making drill stem tests July 31.

Republic Production Company's Brooks 1, Silsbee prospect, Hardin County, at the end of the week was running 7-inch casing to 6950 feet, where a drill stem test made in the Cockfield showed oil and a good gas pressure. Brooks 1 gave evidence of a new oil field in the Texas Gulf Coast when a drill stem test made from 6960 to 6971 feet showed 8 joints of oil mud and a 350-pound gas pressure in 9½ minutes through ¼-inch choke on top and bottom of the testing tool.

After making the test, Brooks 1 was cored to 6982 feet. From 6971 to 6980 was shale, and from 6980 to 6981 feet the operators recovered one foot, of sand with a slight odor of oil. After setting the 7-inch casing at 6950 feet, the operators will either core ahead or make a production test from 6960 to 6971 feet. A drill stem test in the top of the Cockfield formation from 6735 to 6840 feet showed two thribbles of sand with an odor of oil. Gas pressure was 400 pounds.

Brooks 1 makes the third wildcat drilled on the 14,000-acre fee block by the Republic Production Company and Houston Oil Company. The first wildcat drilled in this area was Burrell 1, which was drilled to 7124 feet and abandoned in April 1936. Burrell 2 cored salt water sand in the Cockfield formation from 6615 to 6632 feet and was abandoned at 7077 feet in June, 1936.

Republic Production Company and Houston Oil Company worked in the area with reflection seismograph and torsion balance in 1934 and 1935.

Hitchcock Again

The second wildcat in the area being watched closely was Shell Petroleum Corporation's Maco Stewart 1, Hitchcock prospect, Galveston County. At the end of the week the operators were attempting to make a drill stem test of sands showing oil from 6709 to 6720 feet. A drill stem test of this sand was tried July 30, but the packer failed to hold. The crew is reaming down to make another test.

Shell Petroleum Corporation has encountered considerable sand in Maco Stewart 1 from 6094 to the present depth. The well has encountered a few shale breaks, but the majority of the formation has been soft sand, which might indicate that if a structure is hit along this belt in Galveston County or surrounding counties, large oil reserves may be present. Plenty of sand has been encountered in several wildcats drilled in this general vicinity. At 6099 feet a sand was encountered, and a drill stem test made showed salt water and a slight show of gas. At 6438 feet several drill stem tests were attempted, but each time the seat failed to hold.

Maco Stewart is northwest of the Green's Lake field, recently opened by Sun Oil Company's Hughes 1 and Hughes 2. It is approximately 900 feet north of the Houston-Alvin-Galveston highway in an open sandy area which is approximately three miles from the Galveston Bay. It is in the J. Spillman Survey, Galveston County.

Showing at Danbury

On top of Danbury dome in Brazoria County, Humble Oil & Refining Company made a drill stem test July 31 on Moller 1, S. A. Towsey Survey, at 5935 to 5945 feet and recovered 180 feet of drilling mud and 180 feet of mud and oil in 20 minutes through ¼-inch chokes on top and bottom. The crew is preparing to core ahead.

Earlier in the week the operators attempted to make a drill stem from the above depth, but after the testing tool was open two minutes the seat slipped and only four thribbles of mud was recovered. A showing of gas was encountered while drilling at 5686 to 5696 feet.

The rest of the wells drilled in this area have been around the flanks. Shell Petroleum Corporation drilled several wells on the Haury & Blakeley Winston tracts which showed oil and a large gas pressure around 7500 feet some time ago.

There has been approximately 3200 barrels of oil produced at Danbury from the Miocene sands around 1559 feet. But for the last several years the field has been abandoned.

Green's Lake Proven

Green's Lake area was definitely established as an oil field last week when Sun Oil Company completed Hughes 2, 933 feet northeast of Hughes 1, W. C. M. Baker Survey, Galveston County, as a commercial producer at 3876 feet in the Pliocene formation. The well came in flowing 178 barrels of 22.1 corrected gravity oil in 12 hours through ¼-inch and 3/16-inch choke with a tubing pressure of 1150 pounds. There was no gauge on the casing pressure. Hughes 2 started flowing pipe line oil July 26, 1936. On a potential test taken a few days later the well flowed 180 barrels daily through ¼-inch choke with a tubing pressure of 1263 pounds and a casing pressure of 1450 pounds. The oil is cool and is grade A, with a high lube and low gasoline content. It is flowing into storage tanks and will be trucked out to the company's refinery. Probably a pipe line will be laid soon to Stanolind Pipe Line Company's main trunk line, which runs to Texas City.

Hughes 2 was drilled to 5054 feet and was plugged back to 3891 feet. Seven-inch casing was cemented at 3845 feet. The well is producing from sands at 3857 to 3876 feet in the Pliocene formation. While drilling to 5054 feet the crew cored formation from 3699 to 3714 feet which showed salt water and a trace of oil. A salt water sand was encountered from 3227 to 3232 feet.

Hughes 2 is really classed as the discovery well for the Green's Lake field, as Hughes 1 flowed a small amount of oil and then went to salt water at 3620 feet. Hughes 2 was drilled and is producing from a sand approximately 200 feet deeper than that of Hughes 1.

It appears that Green's Lake field is similar to Goose Creek in Harris County, with several lenticular sands and about the same gravity oil. Sun Oil Company has approximately 12,000 acres in the area, with the block extending over to Shell Petroleum Corporation's block at Hitchcock.

Hughes 1 was drilled to 9636 feet in heaving shale, and due to a fishing job was forced to plug back. It is believed that future drilling and mastering the heaving shale above the Oligocene formation at Green's Lake may possibly open a large reserve in formation below 10,000 feet.

At the end of the week the operators were moving in material to commence drilling on Hughes 3. It is 933 feet south of Hughes 1 and in line with Hughes 1 and 2. Hughes 4, a new location, is 933 feet south of Hughes 1. The two new wells are in the W. C. M. Baker Survey, Galveston County.

About two miles southeast of the Green's Lake field, Sun Oil Company's Houston Farms Development Company 1, D. Buckley Survey, was drilling salt water sand at the end of the week at 3667 feet. Top of the salt water sand was found at 3650 feet, approximately the same depth which Sun Oil Company's Hughes 1 found salt water.

Pan-American Production Company is preparing to drill its first wildcat in the Texas Gulf Coast 2282 feet east of production in the southwestern part of Dickinson field, Galveston County. L. Craig 1 is 1064 feet from the west corner of a 104-acre tract and is 1725 feet west of the east line of the W. K. Wilson Survey. It is east of Coast Petroleum Corporation's Maco Stewart 3, which discovered oil on this side of Dickinson field. Pan-American took the acreage from The Texas Company and agreed to drill five wells if production was found in the first test. Also Pan-American Production is to receive a majority of the oil taken from the area

until the cost of drilling is repaid. After the cost of drilling is paid, then the Pan-American Production Company is to give The Texas Company a percentage of the oil.

About 1000 feet southeast of the discovery gas well at Eureka, Harris County, Houston Oil Company's Lackner 1 was setting 7-inch casing at 7662 feet to make a production test. Lackner 1, H. Reinerman Survey, was drilled to 7678 feet in sand and shale, with the top of the gas sand found at 7662 feet. The well is running about flat with the discovery well, and is expected to make a gas and distillate producer similar to C. B. Bunte's Laura Lackner 1, which was completed at 7662 feet in the Upper Saline Bayou formation. The discovery well made 51 gravity distillate at 7662 feet.

There have been four tests drilled in this area since C. B. Bunte discovered the Eureka gas field. Each has been dry.

Washing in at Willis

On the Willis prospect in the Wm. Weir Survey, Montgomery County, W. O. Belnoski's Wood 1 was being washed in at the end of the week. The well was washed with 48 barrels of oil and late July 31 was flowing oil and water through ⅛-inch choke with a tubing pressure of 640 pounds and a casing pressure of 820 pounds.

Wood 1 was drilled to 4004 feet and

[*Continued on page 74*]

TEXAS GULF COAST Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
AMELIA—		
Humble, Pinchback 2	648	6778
ANAHUAC—		
Gulf, Knowles 3	227	7100
Humble, Engles 11	624	7080
Zappe 5	696	7075
Sun, White 17	648	7085
BATSON—		
Gulf, Wing 175	35	600
CLAY CREEK—		
Sun, Elman 1	*	2037
DAMON MOUND—		
John McClarty, Jackson 1	*	1022
J. S. Wisdom, Jackson 5	100	1354
ESPERSON—		
General Crude, Davis 16	*	3725
Esperson 28	140	2398
FANNETT—		
Gulf, Burrell 10	480	4520
GREEN'S LAKE —		
Sun, Hughes 2	356	3876
HIGH ISLAND—		
Stanolind, Cooper Estate 1	*	5713
HULL—		
Gulf, Phillips 27	175	3055
MANVEL—		
Texas Co., Lieder 4 (wo)	240	4009
Way 2-B	162	4125
MARKHAM—		
Hamil & Hamil, Kountz 5	*	5759
RACCOON BEND—		
Humble, Paine 18-X	456	4070
SOUTH HOUSTON—		
Stanolind, Drilling District 17	240	4685
Mathews 1	534	4775
HASTINGS—		
Stanolind, Williams 6	552	6080
SPINDLE TOP—		
Unity Oil Co., Oakwood 2	240	2775
STRATTON RIDGE—		
Werner Oil Co., Dannenbaum 3	*	1189
TOMBALL—		
Humble, Heger 1	504	5561
WITHERS—		
Texas Co., Pierce Estate C-8	112	5549
BURLESON COUNTY—		
M. R. Exploration Co., Fontaine 1, e of Caldwell, Wm. Raleigh sur.	*	2610
HARDIN COUNTY—		
Resource Prod. Co., Howth 1, sw of Ariola, A. J. Cotton sur	*	6021

*Failures; †Junked; ¶Million cu. ft. gas.

Test Shows Oil

MIKE HOGG'S CHARENTON WILDCAT MAY PRODUCE

Lake Charles.—Evidence of a new oil field was shown last week in the Louisiana Gulf Coast when Mike Hogg's Lawes Realty Company 1 near Charenton, St. Mary Parish, made a drill stem test in Miocene formation at 4181 feet which showed saturated oil sand.

Lawes Realty Company 1, Section 30-13s-10e, tested sand at 4148 to 4181 feet. In 6½ minutes it showed three stands of shale and sand heavily saturated with oil. Two quarter-inch chokes were used. Pressure was 150 pounds. A true test was not made of the sand because the testing tool slipped at 4148 feet. Slight oil showings were also reported at 2155 and 2907 feet. Further information is being withheld until the well is completed.

Mike Hogg has a large spread of acreage surrounding the well and so does Harry Hanszen, who discovered Jeanerette field in St. Mary Parish.

If Lawes Realty Company 1 opens up a new oil reserve it will be the second field discovered in St. Mary Parish. Also, if the well produces commercial oil it will be the second field discovered in the Louisiana Gulf Coast since the first of the year. Bayou Mallet field, Acadia Parish, was the first.

Continental Oil Company continues to search for deeper producing horizons at Abbeville, Vermilion Parish, in Alvin Hebert 1, Section 20-12s-3e. At the end of the week the operators were drilling ahead below 11,026 feet in sandy shale, having made only 24 feet in 24 hours. However, during that time the crew was coring which took considerable time. Cement was drilled from inside the casing last week, and it was found that the cementing job held the heavy load of casing set at 10,947 feet in Miocene formation.

Woodlawn Abandonment

The third wildcat to be abandoned on the Woodlawn prospect in Jefferson Davis Parish by Strake Oil Corporation was Miller Estate 1, Section 7-9s-8w. The wildcat was drilled to 8510 feet in Marginulina formation, failing to show any signs of commercial oil. The first wildcat drilled in the area by Strake Petroleum Corporation was Pettigrew 1, which was abandoned at 7348 feet in March, 1934. The second test was Calcasieu National Bank 1, which was dry at 8505 feet in April, 1935. This latter wildcat had an odor of oil around 8100 feet, but on a drill stem test the well showed salt water.

On the Trilby prospect in Acadia Parish, H. E. Dalton made location for Setting 1 and spudded by hand on July 23, 1936, and shut down at 30 feet at the end of the week. The well is located in CNE NW SE, Section 17-7s-1w, Acadia Parish. Humble Oil & Refining Company, Gulf Oil Corporation, Shell Petroleum Corporation, and Rycade Oil Corporation hold large spreads in this area, and it is understood that several of the major oil companies will help H. E. Dalton drill the wildcat. Pendulum, torsion balance, and reflection seismograph have shown interesting reactions in this area, and Setting 1 will be interesting to watch.

Gillis Extended

Gillis field in Calcasieu Parish, was extended southeast last week when The Texas Company completed Nickerson Fee 10, Section 12-9s-8w, for 255 barrels daily through a quarter-inch choke with a tubing pressure of 250 pounds. Depth was 6730 feet, Marginulina formation. Oil sand was found at 6720 to 6727 feet and seven-inch casing was cemented at 6718 feet.

The Texas Company has made location for Nickerson Fee 11. It is 953 feet east and 217 feet north of the center of Section 11-9s-8w, Gillis field. One mile south of Gillis and in the English Bayou field, Fohs Oil Company made location for Wasey 3. It is 250 feet west of the east line and 400 feet north of the south line of the Wasey tract in Section 14-9s-8w.

On the Henderson prospect in St. Martin Parish, The Texas Company completed St. Martin Land Company 8, Section 9-8s-7e, as a dry hole at 8871 feet. The well had showings of oil around 4753 feet, 5973 feet, 6159 feet and 6298 feet.

Another failure was marked up for Pan American Production Company on the west side of Port Barre field, St. Landry Parish, last week when the operators plugged Cormier 2, Section 4-6s-5e, at 5258 feet in salt. Top of the salt formation was found at 5230 feet. On a drill stem test at 5105 feet the well showed salt water. At the end of the week the operators were rigging up on Haas-Hirch 1, near the operators' discovery well, which discovered a new sand on the west flank of the field.

At Hayes in Jefferson Davis Parish, Shell Petroleum Corporation was cutting and pulling seven-inch casing before abandoning Lacassine 1, Section 20-11s-5w, at 9844 feet. The operators made a series of drill stem tests from the bottom of the hole up to 8600 feet, and each test showed salt water. However, several of the drill stem tests showed large gas pressures.

East of the discovery gas well at Big Lake, Magnolia Petroleum Company was drilling in shale at 9285 feet in Alvin Hebert 1, Section 13-12s-9w, and is reported to have had a gas showing at that depth. The well had a showing of oil at 9155 feet in Discorbis formation.

Humble Oil & Refining Company's Bel 1, Bel prospect, Allen Parish, made two drill stem tests from 7469 to 7816 feet last week and showed salt water and mud. On the first drill stem test, which was made in 20 minutes with a 9⅞-inch packer set at 7450 feet, the operators recovered 11 thribbles and 1 single of mud. The hole was then drilled to 7689 feet

and another test made from 7469 to 7816 feet. On the last drill stem test the well started flowing fluid in 21 minutes through quarter-inch chokes on top and bottom. Pressure was 425 pounds and the formation pressure was 4400 pounds. The well flowed fluid for 89 minutes and then was killed. The operators will drill deeper.

On South Jennings prospect, Jefferson Davis Parish, Stanolind Oil & Gas Company's Calcasieu National Bank 1, Section 15-10s-3w, was drilling in sand with a showing of oil at 8182 feet. It is reported the operators will core ahead and then make a drill stem test.

TEX BRADFORD is very elated over his success in killing the fire in the National Petroleum Corporation's wild gasser in the Greta field, Refugio County. He was given the contract at 5:30 o'clock in the afternoon and eight hours later, the well fire was extinguished. He also was expressing appreciation to the fire department and companies in the field for their assistance.

SOUTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GILLIS—		
Texas Co., Nickerson Fee 10.....	255	6730
PORT BARRE—		
Pan American Prod. Co., Cormier 2	*	5258
WEST HACKBERRY—		
Sutton Oil Co., Duhon 5	40	3272
JEFFERSON DAVIS PARISH—		
Shell, Lacassine 1, Hayes prospect, sec 20-11s-5w	*	9844
Strake Petroleum Corp., Miller Estate 1, Woodlawn prospect, sec 7-9s-5w	*	8505
ST. MARTIN PARISH—		
Texas Co., St. Martin Land Co., 8, Henderson prospect, sec 9-8s-7e...	*	8870

*Failures; †Junked; ¶Million cu. ft. gas.

Further Westward

RODESSA 14 MILES WIDE AND ENDS LOOK FAVORABLE

WEEKLY STAFF REPORT

Shreveport.—The southwestern tip of the Rodessa field in Cass County, Texas, was extended 1¼ miles farther west last week when Marathon Oil Company's R. P. Willis 1 (320-acre tract), S. F. I. W. Survey, was completed from 16 feet of saturated Dees sand, flowing 25 barrels of oil per hour through ¼-inch tubing choke. Total depth is 5985 feet in the Young Horizon, but the oil, an electrical tester indicated, is coming from the Dees formation. Saturation was topped at 5942 feet.

This extension makes the Rodessa field approximately 14 miles in width in a northeast-southwest direction. The northeast and southwest extremities of Rodessa by their favorable developments of the last three weeks indicate that a major part of the activity of the immediate future will be in those parts of the field until such time as the limits are definitely established.

The new producer was Marathon Oil Company's first test at Rodessa. The well compares favorably with the best in any part of the field and checks favorably with producers in the heart of the proven area. The company made location for R. P. Willis 2, located 330 feet north and west SWc Robert Trammell S. F. I. W. Survey and R. P. Willis 3, located 330 feet south of the most southerly north line and 1039 feet southeast of R. P. Willis 2.

Elevation of R. P. Willis 1 was 199 feet. Seven-inch casing was cemented at 5935 feet. Top of first anhydrite was 5024 feet, top of the Gloyd was 5795 feet, and top of the massive anhydrite was 5307 feet.

Another Cass County producer last week which was one location west of the Rambo 4½-mile recent extension well, was W. F. Lacey's Bauguss 1, J. H. Rives Survey, completed at 6029 feet, flowing 18 barrels of oil per hour through 3/16-inch tubing choke. Elevation of this test was 258 feet. Hill sand was topped at 5636 feet and the Gloyd at 5795 feet. Seven-inch casing was cemented at 6004 feet.

Other new locations announced last week in Cass County were Phillips Petroleum Company's Stallcup 1, Robert Trammell Survey, an east offset to Showers & Moncrief's recent producer on this lease; and Lide and associates' Bauguss 1, J. H. Rives Survey.

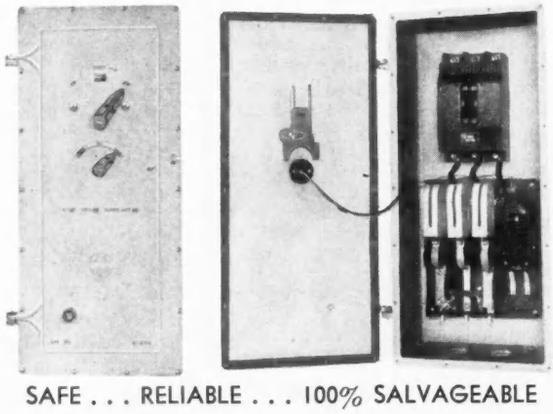
Superior Oil Company, which is drilling below 4881 feet in Chatten 1, W. R. Meyers Survey, 2½ miles southwest of nearest production, is reported to have checked low on red beds topped at 3366 feet, with elevation of 210 feet, and may be on the downthrow side of the fault. There is talk that this test will be continued into the Travis Peak.

Five in Louisiana

Besides the two Cass County producers there were 5 producers completed last week on the Louisiana side of the field. They are: Arkansas-Louisiana Gas Company's Rodessa 20, Section 23-23n-16w, a townsite well, completed at 5995 feet, flowing 23 barrels per hour through ½-inch tubing choke; Drillers Inc.'s (S. P. Borden et al) Kansas City Southern Railroad 2, on the railroad right-of-way in the Rodessa townsite, Section 23-23n-16w, flowing 13 barrels per hour through ¼-inch tubing choke after treatment with acid; United Gas Company's Spearman 4, Section 18-23n-15w, in the northeast part of the field, completed at 6047 feet, flowing 56 barrels per hour through ½-inch tubing choke; the same company's Pitts 9, SW SW 13-23n-16w, completed at 6080 feet flowing 16 barrels per hour through 24/64-inch tubing choke; the same company's Thomas 6, NE NW 23-23n-16w, completed at 6000 feet, flowing 31 barrels per hour through ½-inch tubing choke.

The northeast part of the field received four new locations by Pyramid Oil & Gas Company, all four being in Section 8-23n-15w, O. M. Keel 1 and 2, and Fitts 1 and 2.

Tidewater Oil Company last week



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formally took over the 120-acre Sexton lease purchased from Pelican Oil & Gasoline Company on which are 13 wells. It is reported that production will move to seaboard through Texas Pipe Line Company's line.

To Correct Gas Waste

Officials of Tide Water Oil Company have indicated that this company will seek the co-operation of other companies in Rodessa to reduce the large amount of gas waste in that area where in practically every oil well completed there is a large amount of gas. The company will seek to reduce by at least a third the gas wastage and eventually will seek the ratio of 2000 to 1 in the Louisiana part of the field.

The first well to show an appreciable amount of salt water in the Cass County part of the field was Magnolia Petroleum Company's Haywood 3, Priscilla Evans Survey, which last week tested salt water in the Young horizon at 6047 feet; elevation is 244 feet. The test was plugged back to 5925 feet and casing was perforated in the Dees at 5910 to 5920 feet.

In Cass County, between Atlanta and Marietta, Gulf Oil Corporation is leasing, and approximately 1200 acres have been placed of record.

Wildcats Interesting

Three interesting wildcats below the anhydrite zone in North Louisiana and one just across the line in Shelby County, Texas, created considerable interest last week with showings of oil and gas.

In Pyramid Oil & Gas Company's (United Gas Company, half-owner) Wheeler A-1, Section 16-18n-16w, Caddo Parish, Blanchard district, 10,000,000 cubic feet of dry gas showed in 17 minutes in a drill stem test through ½-inch choke on bottom of hole at 5911 feet, the test being taken from 5888 to bottom after an electrical tester was run. Owners are arranging to set a string of 5-inch casing and attempting to complete this well at this depth which is identified as top of the Travis Peak. First commercial production of gas in the Travis Peak in North Louisiana was recently secured in Lide & Greer's S. Gardner 1, Section 10-17n-4w, Lincoln Parish. Wheeler A-1 recently tested salt water after casing was cemented and it was swabbed at 4850 feet. Elevation is 250 feet.

Southwest of the Elm Grove gas field, Bossier Parish, but near Caspiana, Caddo Parish, Prairie River Syndicate (J. E. Smitherman et al), in Hutchinson 1, Section 15-15n-12w, missed a drill-stem test at 4555 feet, then ran an electrical tester and was preparing to core ahead. With elevation of 152 feet this test logged anhydrite from 3985 to 4485 feet, and in a core from 4515 to 4535 feet recovered 10 feet of dense hard lime. In cutting the next 20-foot core 14 feet were recovered of dense fractured lime with dead oil appearing in the crevices.

In Shelby County, Texas, near Joaquin, H. A. Stebbinger and associates cored Oolitic lime of the Glen Rose from 4903 to 4920 feet, with a reported show of oil and gas, in Pickering Lumber Company 1, C. F. Henry Survey. Elevation is 268 feet. Massive anhydrite was logged in this test at 4604 feet and base was about 4770 feet.

Considerable leasing activity continues

PRESSURES

Shreveport.—Bottom hole pressures on 15 of the first wells completed on the Cass County, Texas, side of the Rodessa field show an average pressure of 2466 pounds.

Corrected to sub-sea depth of 5750 feet, these wells show the following bottom hole pressures: American Liberty Oil Company, Maxie 1, John Collum Survey, 2334 pounds; Maxie 2, 2260 pounds; Maxie 3, 2256 pounds; Maxie 4, 2363 pounds; Edmond Key, Jr., Rives 1, John Collum Survey, 2418 pounds. Magnolia Petroleum Company (Norton), Haywood 1, Priscilla Evans Survey, 2555 pounds; Rives 1, John Collum Survey, 2693 pounds. The Texas Company, Hall 1, James Young Survey, 2634 pounds. United Production Corporation, Fields 1, John Collum Survey, 2524 pounds; Fields 2, 2382 pounds; Fields 3, 2414 pounds; Jones 1, Benjamin J. Murray Survey, 2617 pounds; Jones 2, Benjamin J. Murray Survey, 2555 pounds. United Production Corporation, F. S. Simpson 1, James Young Survey, 2555 pounds; and United Production Corporation's Stewart Unit 1, John Collum Survey, 2437, pounds.

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on the Sabine Uplift, in the North Louisiana Basin and in Northeast Louisiana for Permian lime producing possibilities, although activity has slowed down considerably in North Louisiana as a whole.

In Bienville Parish, Shell Petroleum Corporation is buying some leases in Township 15 north, Range 6 west. Southern States Petroleum Company has leased 1250 acres in the same parish in Township 18 north, Range 7 west. Greer and associates have assigned the oil rights on 2700 acres of leases in Township 16 north, Range 5 west.

In Bossier Parish, Shell Petroleum Corporation has leased the bed of Bodcaw Bayou from the State of Louisiana, this being in Township 21 north, Range 11 west and in Township 19 north, Range 12 west, some of the acreage reaching into Webster Parish.

Tide Water Oil Company has been leasing recently on the north and northeast flanks of the old shallow Homer field, Claiborne Parish. H. L. Hunt has recently acquired over 1500 acres of leases in the same parish in Township 23 north, Range 6 west. Charles Lunsford recently assembled a 7000-acre block centering in Section 21-20n-8w, Claiborne Parish.

In Northeast Louisiana, Gulf Oil Corporation has been leasing recently in Township 15 north, Range 7 east. In La Salle Parish, Adams Royalty Company has been leasing in Township 6 north, range 3 east, with a drilling obligation for a 6000-foot test to spud by September 1.

In Webster Parish, Haynes Drilling Company recently took some leases in Township 17 north, Range 9 west, and Magnolia Petroleum Company has been taking some scattered leases in Township 23 north, Range 9 west and in Township 18 north, Range 10 west.

Several companies are buying what protective acreage is available around Gulf Oil Corporation's deep test in the old shallow Richland Parish gas field which is being drilled in Section 32-17n-6e.

Starts in Texas

A. C. Glassell and associates of Shreveport last week made location for a wildcat test in Panola County, Frost Lumber Company 1, Mary S. Potts Survey. The test is rigging up. In the same county, Gulf Oil Corporation last week spudded Pierce and Chesbro 1, J. H. Shahan Survey. Both are designed for 5500- and 6000-foot tests, respectively. Glassell and associates have approximately 6000 acres.

Amerada Petroleum Corporation recently has been buying acreage in the C. Q. Haley, B. B. & C. B. Smith, N. Smith and J. Blankenship Surveys. Pure Oil Company recently acquired 1000 acres from the Marshall Lumber Company in the S. B. Hendricks and nearby surveys. In this county, Shell Petroleum Corporation continues to shoot south of Carthage.

In Harrison County, Amerada Petroleum Corporation is shooting a few miles east of Harleton and Arkansas-Louisiana Gas Company has a seismograph unit working around the shallow Waskom gas field.

In San Augustine County, G. W. Hindman of Houston is shut down at 2090 feet in J. M. Cartwright 1, A. Sandford Survey, on a 6000-acre block.

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Rodessa)—		
Ark. La. Gas Co., Rodessa 20, 23-23n-16w	1000	5995
Drillers, Inc., K.C.S. Ry. 2, 23-23n-16w	1000	6008
United Gas Pub. Serv. Co., Spearman 4, 18-23n-15w	3000	6047
Pitts 9, 13-23n-16w	2000	6080
Thomas 6, 23-23n-16w	1000	6000
CASS COUNTY, Texas (Rodessa)—		
W. F. Lacey, Bauguss 1, J. H. Rives Survey	2000	6029
Marathon Oil Co., R. P. Willis 1, S.F.I.W. Survey	2500	5985
RAPIDES PARISH (Cheneyville)—		
Beatty, Bowles et al, Haas 1, 18-1s-2e	†	6011
Texas Eagle Oil Corp., State-Andrade 1, 5-1s-2e	*	5715
GRANT PARISH (Urania)—		
W. B. Rheineck, T., Swope 1 19-9n-1e	10	1602
MOREHOUSE PARISH (Monroe)—		
J. E. Farrell & Co., State of La. 25, 20-22n-4e	¶1½	2132
State of La. 32, 36-21n-4e	¶2½	2212
United Gas Pub. Serv. Co., Tensas Delta 17, 26-22n-4e	¶2½	2270
Tensas Delta 28, 3-21n-4e	¶5½	2172

*Failures; †Junked; ¶Million cu. ft. gas.

LOUISIANA PERMITS

Shreveport, La.—Seventeen drilling permits were authorized last week by the Louisiana Conservation Commission, minerals division. Of these nine were in North Louisiana divided among the following parishes: Bienville, one; Caddo, four, all in Rodessa; Natchitoches, one; and Union, three. Those in South Louisiana were in the following parishes: Acadia, three; Calcasieu, two; Cameron, one; Iberia, one; and Plaquemines, one.

Shreveport.—The Coltexo Corporation, natural gasoline manufacturers in the Texas Panhandle, are planning a $200,000 gasoline plant in the Rodessa field, tentative location being in Section 14-23n-16w, in the heart of the Louisiana side of the field. The plant, if erected, will have a daily capacity of 50,000,000 cubic feet of gas daily, which will be secured from the Standard Oil Company of Louisiana's wells in Rodessa.

Lake Charles.—Only two oil producers were completed in the Louisiana Gulf Coast during the past week. The Texas Company's Nickerson Fee 10 at Gillis, Calcasieu Parish, made 255 barrels daily, and Sutton Oil Company's Duhon 5 at West Hackberry, Cameron Parish, made 40 barrels daily on the pump. The remaining four completions were failures.

BOB SMITH and Claude Hamill, of Smith and Hamill, have been making numerous trips into the South Texas territory to inspect their properties. They have extensive holdings in the Mirando district.

SOUTHEASTERN STATES Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JACKSON COUNTY—		
Mrs. Mamie Hammonds et al, Grandberry 1, 15-5n-9w	*	5015

*Failures; †Junked; ¶Million cu. ft. gas.

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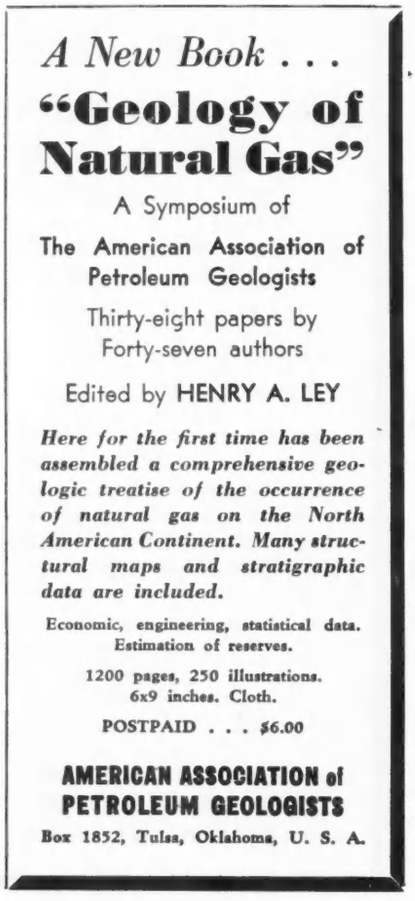
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BRADLEY COUNTY

Test shows dead oil in lime fractures; coring

WEEKLY STAFF REPORT

El Dorado, Ark.—Chief wildcat interest in Arkansas last week was centered on Phillips Petroleum Company's Murphy Land Company 1, NW NW 12-17-11, Bradley County, which logged top of the Permian lime at 4900 feet; elevation is 91 feet. This test is arranging to core ahead at 4920 feet for the Oolitic lime. The lime was reported to have been dense with dead oil in the fractures which lay almost vertically.

Meanwhile in the Snow Hill area proper, Phillips Petroleum Company's Arnold 1, NE SW 27-15-15, Ouachita County, in a 24-hour gauge produced 80 barrels of fluid, some of it oil, and 5,253,000 cubic feet of gas through tubing choke at 5087 feet; 9⅝-inch casing was cemented at 4914 feet. Casing pressure was 850 pounds and tubing pressure 90 pounds.

The same company's half-mile west extension of the Permian lime production, L. W. Harris 1, Section 28-15-15, on the latest gauge made 27.2 barrels of oil and 3,500,000 cubic feet of gas through 23/64-inch tubing choke with casing pressure 1450 pounds and tubing pressure 1390 pounds.

H. D. Easton and associates last week made location for Conway-Tiller 2, SW SW 34-12s-27w, in Hempstead County. This is the second test to be drilled on a 20,000-acre block and is 2 miles southeast of the first test. The latter was drilled to 2862 feet and had several shows of oil in the Travis Peak where fresh water also was present. With an elevation of 290 feet, the following markers were logged:

Tokio 883 to 1170 feet; top first anhydrite 1728 feet, top massive anhydrite 1913 feet, base massive anhydrite 1969 feet, base stringer anhydrite 2165 feet; top oolitic lime 2241 feet; asphaltic sand 2281-2284 feet; top Travis Peak 2590 feet; and top Paleozoics, 2834 feet.

George Le Grand of Shreveport announced assembly of an 8000-acre block in Cleveland and Dallas Counties, centering in Section 27-9-13 for a proposed test to the Paleozoics.

Twenty-two geophysical parties were working last week in South Arkansas, a result of the Snow Hill Permian lime development. Companies for which they are working and their approximate locations follow: Amerada Petroleum Corporation, Township 15, Range 14; Arkansas-Louisiana Gas Company, in Bradley and Drew Counties; Continental Oil Company, two crews in Ouachita County, Township 15, Range 15; East Texas Petroleum Company, Township 19, Range 19; Gulf Oil Corporation, Township 17, Range 14; Lion Oil Refining Company, Township 15, Range 16; Magnolia Petroleum Company, Township 18, Range 12; Mid-Continent Petroleum Corporation, Township 17, Ranges 14 and 15; Ohio Oil Company, La Fayette County, southeast of Stamps; Phillips Petroleum Company, four crews in Ouachita County, Union County, Township 18, Range 8, and Township 19, Range 9; Root Petroleum Company, Hempstead County; Sinclair Oil & Refining Company, in Miller County, near Fouke; Standard Oil Company of Louisiana, Miller County; Superior Oil Company, Township 18 south, Range 23 west; Tide Water-Seaboard Oil Corporation, Township 12, Range 18, Ouachita County; Federal Petroleum Company, Township 18, Range 12, Union County; and Superior Oil Company, La Fayette County, near Stamps.

El Dorado, Ark.—T. H. Barton, president of Lion Oil & Refining Company, announces work will start at once on the construction of an asphalt plant which will increase production of the present unit 25,000 tons annually. Construction is due to be completed by January 1.

ARKANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
UNION COUNTY (Rainbow City)—		
J. E. Crosbie, Inc., Sullivant 6, 12-17-14	144	3181

*Failures; †Junked; ¶Million cu. ft. gas.

Fig. 511

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Watch Five Tests

[*Continued from page 69*]

several tests were made in the Cockfield formation that showed salt water. The hole was plugged back and 7-inch casing was set at 3720 feet. The sand was tested from 3720 to 3739 feet.

E. V. Richard et al made location for Yarbrough 1 in the Splendora area of Montgomery County. The wildcat is 588 feet east of the E. H. & W. T. R. R. and 330 feet north of Stanolind Pipe Line Company's tract in the Wm. Barker Survey.

Red Bank Oil Company has made location for Central Coal & Coke Company in the T. P. Whitmore Survey, Montgomery County. It is 2375 feet north and 1520 feet east of the southwest corner of the survey.

Over one mile northeast of production at Anahuac in Chambers County, Humble Oil & Refining Company's E. W. Boyt 1, H. & T. C. Survey, Section 44, was reaming at 7026 feet after encountering gas sand from 6955 to 6965 feet and running about flat with the Anahuac field proper. A drill stem was twisted off at 6825 feet, which forced operators to plug back to 6623 feet and sidetrack. During the coming week the well should be down to the regular pay horizon found in the field. However, little hope is given the well a chance to produce, as it is located northeast of a fault which was discovered by Gulf Production Company's Knowles 1.

Gulf Oil Corporation completed Knowles 3. It is the second producer for the operators at Anahuac. The hole was drilled to 7100 feet and after making a drill stem test from 7075 to 7100 feet, which filled the drill pipe in eight minutes, 7-inch casing was cemented at 7025 feet. The well came in flowing 227 barrels of pipe line oil daily through ¼-inch choke with a tubing pressure of 450 pounds and a casing pressure of 1200 pounds.

Three other producers were completed at Anahuac last week. Humble Oil & Refining Company finished Engles 11 and Zappe 5, while Sun Oil Company completed White 17. Engles 11 made 26 barrels per hour through ¼-inch choke from 7080 feet. Zappe 5 made 29 barrels per hour through ¼-inch choke from 7075 feet, and Sun Oil Company's White 17 made 27 barrels per hour through ¼-inch choke from 7085 feet. Humble Oil & Refining Company has two other wells in the field nearing completion. White 12, on the north side of the field, was running 2½-inch tubing at 7128 feet in oil sand. Tyrell 12 was setting screen at 7080 feet after topping the oil sand at 7016 feet and setting 7-inch casing at 7051 feet.

Hastings Is Extended

The Hastings field, Brazoria County, was extended into Galveston County last week when Stanolind Oil & Gas Company's Elliott 1, Wm. Henry Survey, was completed at 6065 feet. The well cored oil sand from 6036 to 6063 feet and set seven-inch casing at 6035 feet. At the end of the week the well was flowing into burning pits but no gauge had been taken.

Humble Oil & Refining Company has made location for C. A. Brown 1 on the northeast side of the Hastings field. The well is approximately 2000 feet northeast of Stanolind Oil & Gas Company's Ford lease, being located 466 feet out of the southwest corner of the W. H. Snyder Survey, Brazoria County.

North of the western portion of the Hastings field, Brazoria County, Stanolind Oil & Gas Company was preparing to complete N. M. Reckhardt 1, H.&T.B. Survey, Section 29. The well was drilled to 5833 feet after finding sand from 5601-5829 feet. Seven-inch casing was set at 5601 feet.

Stanolind Oil & Gas Company has completed Williams 6 at Hastings. The well came in making 229 barrels in 10½ hours through a quarter-inch choke with a tubing pressure of 800 pounds and a casing pressure of 1000 pounds. It was bottomed at 6070 feet in oil sand. Top of the oil sand was found at 6065 feet and seven-inch casing was set at that depth.

Stanolind Oil & Gas Company also completed two wells in the South Houston field, Harris County, last week. The operator's Mathews 1 made 534 barrels daily, and Drilling District 17 made 124 barrels in 13 hours. Both of the wells were completed in the Oligocene formation.

Around 13,000 feet west of the Withers field, Wharton County, The Texas Company's Pierce Estate B-2 was waiting on cement to set before making a production test at 5556 feet, where seven-inch casing was set. The hole was originally drilled to 5558 feet, where a drill stem test from 5541 to 5553 feet showed 275 feet of oily mud and a good gas pressure. The hole then was plugged back to 5262 feet, sidetracked and re-drilled to 5556 feet. The well indicates it may open up additional productive acreage at Withers. Pierce Estate B-2 is 1800 feet north of Pierce Estate B-1, which came in as a gas well some time ago from 5555 feet.

The Texas Company completed Pierce Estate C-8, Wm. Pettus Survey, Withers field, Wharton County, at 5549 feet after perforating the casing with 18 shots from 5538 to 5544 feet. The well flowed for eight barrels per hour through a quarter-inch choke with a tubing pressure of 850 pounds and a casing pressure of 1025 pounds. The same operator's Pierce Estate C-9, also in the Withers field, made a dry gas well at 5544 feet, after perforating the casing with 11 shots from 5540 to 5544 feet, tubing pressure was 1250 pounds and the casing pressure was 1600 pounds.

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Seven New Starts

TWO EAST LEA COUNTY WELLS INCLUDE EXTENSION

NEW MEXICO

WEEKLY STAFF REPORT

Hobbs, N. M.—Seven new operations were allotted to three areas in Lea County the past week, and all but one were required by offset production. The sandy-lime belt in the east portion of the county added two natural flowing wells, including a one-mile east extension for the territory to the south of the town of Eunice.

Skelly Oil Company's Ellen Sims 1, C NW SE 3-23s-37e, provided the extension in developing a flow of 421 barrels of oil in 13 hours while drilling with cable tools at 3538 feet. First oil saturation was logged at 3513 feet, with an elevation of 3300 feet. Rotary rig has been erected by the company to drill Sims 2 on a south offset location.

The sandy-lime belt to the east of Jal townsite has a new flowing producer in process of completion at Repollo Oil Company's Frances Stuart 1, SE NW SE 10-25s-37e, which flowed 378 barrels natural through casing at 3350 feet, or 236 feet sub-sea. It is a north offset to a big producer completed at 3294 feet, or 189 feet below sea level. The Texas Company's E. D. Fanning 1, C SE NE 4-24s-37e, west offset to a small wildcat producer, was carrying 100 feet of oil in hole while drilling in sandy-lime zone at 3691 feet, with an elevation of 3293 feet.

The original Eunice field and Monument each added three new tests the past week. In the former area Continental Oil Company took care of necessary offsets in starting work on State 1-D-11, C NW SW 11-21s-36e; M. Lockhart 3-B-14, NW NE NE 14-21s-36e; and State 3-D-15, C NE NE 15-21s-36e. There were no completions recorded the past week in the Eunice lime area, although a number of wells are in process of completion.

Humble Oil & Refining Company is to make its first bid for production in the Monument field with rig up for M. E. Laughlin 1, C SW NE 4-20s-37e, south offset to an excellent producer completed recently by Shell Petroleum Corporation on the southeast border, but less than one mile northwest of one of the two dry holes that have been drilled within or near the field. The Texas Company's J. R. Phillips 4, C SE NW 6-20s-37e, is a new project on an inside location. Amerada Petroleum Corporation has started work on W. D. Haney 1, C SW SW 33-19s-37e, which is situated more than a regular location from nearest production, and if productive will result in the drilling of a number of progressive offsets.

Tide Water Oil Company's State 2-F, C NE NW 20-19s-37e, situated on the northeast border of production at Monument, failed to attain steady flow after dual acid treatment in lime at 4026 feet, or 323 feet sub-sea, but will make its allowable quota. With the aid of flow valves and gas lift the well produced 42 barrels of pipe line oil in 7 hours. Continental Oil Company's State 1-A-17, C SW SW 17-19s-37e, situated on an abutting lease, flowed 15 barrels per hour natural through ¾-inch tubing choke from lime at 3965-4011 feet, with an elevation of 3705 feet.

Muskogee.—Oil, gas, coal and asphalt mining leases in 25 counties will be offered for sale at public auction August 12 at the office of A. M. Landman, superintendent for the Five Civilized tribes at Muskogee. The sale will begin at 10 o'clock, and will be conducted under the regulations prescribed by the Secretary of the Interior, governing the letting of mining and mineral leases.

EXTENSION LIKELY

Well south of Sundance showing for production

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—Indications that Sundance pool, Lance Creek field, would be extended a half mile south were seen this week in MacKinnie Oil & Drilling Company's Mary Thompson 1, NE SW NE 7-35n-65w, Niobrara County, which cored strong oil saturation in the second bench of the Dakota. After getting the first Dakota at 3310-49 feet, a sandy shale with oil and gas shows, and the second bench of Dakota at 3349-69 feet, highly oil saturated, the well is coring ahead at 3474 feet. It did not stop to test production in the second bench of the Dakota, which is estimated capable of producing from 300 to 600 barrels daily.

A production increase was reported in Continental Oil Company's Apex 3 Account 2, C SE NW 34-36n-65w. At the close of the week it was flowing 1500 barrels a day. This well, which extended the field a mile east, was reported as a completion two weeks ago when it flowed 35 barrels of oil per hour from the Sundance sand at 4019-26 feet. The same company has a near completion in Schuricht 3-A, SW NW 5-35n-65w. It tested 53 barrels per hour from the basal Sundance at 3756-3814 feet. Total depth is at 3824 feet, 7 feet in the red beds.

Ohio Oil Company finished one well and staked location for another in Lance Creek field. Lamb 8, Account 2, C SW NE 5-35n-65w, flowed 1262 barrels in 24 hours on final gauge. Hole bottomed 2 feet in the red beds at 4047 feet. The basal Sundance was logged at 3951-4045 feet. The company's new location is Richards & Comstock 3, 450 feet north of the C NE SW 32-36n-65w,

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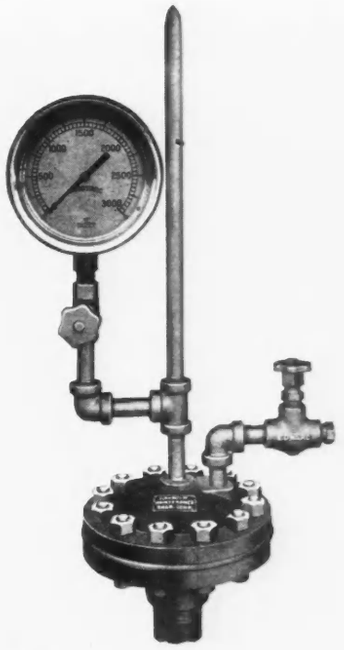

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Lance Creek, and is digging cellar. Company's Carrie Putnam 5, C NW SW 33-36n-65w, is drilling at 3603 feet.

South Central Wyoming

A well of Ohio Oil Company nears completion in Big Medicine Bow field, Carbon County, south central Wyoming. Union Pacific 2, C NE NE 35-21n-79w, is in the Sundance sand with hole bottomed at 5586 feet. Seven-inch casing is set at 5508 feet.

In the same field, Ohio Oil Company's Union Pacific 3, C NE SE 23-21n-79w, is running low on structure. Well is coring at 5500 feet, feeling ahead for the Sundance sand.

In Rock River field, Carbon County, Ohio Oil Company's Diamond Cattle Company 7, C N 35-20n-78w, is coring Sundance sand at 3169 feet. Sand was topped at 3125 feet. The company's State 4, SEc NE NE 34-20n-78w, same field, is plugging back to recomplete in the Dakota at 3070 feet. Water was encountered in Sundance topped at 3408 feet.

Northeastern Wyoming

One dry hole and an oil well completed in Osage field, Weston County, northeastern Wyoming. Charles Stough's 2, 500 feet north and 200 feet east of the southwest corner, SW NW 4-46n-63w, is pumping 10 barrels oil in broken sands from 225 feet to 305 feet.

H. D. Wiltse abandoned No. 8, center of the north line NW NE 17-46n-63w, at 400 feet.

Hawkeye Supply Company's 5, center west line NW SE 18-46n-63w, is testing water shut off in 8¼-inch casing set at 487 feet.

Wheedon Oil Company's 21, C SW SW 16-46n-63w, Osage, is drilling at 800 feet.

Dubuque-Wyoming Syndicate's 2, SE NW NW 31-48n-63w, is feeling for the top of the sand below 1400 feet.

Al Jones' Julius Bock 13, SW SW NE 21-46n-63w, Osage, is drilling at 150 feet.

Northern Wyoming

In the Byron field, Big Horn County, northern Wyoming, Ohio Oil Company is completing a well and has staked location for a new test. Robert Till 1, C SE SW 24-56n-97w, is testing production from Embar lime at 5260-5333 feet and from Tensleep sand at 5333-5417 feet, total depth. The 7-inch string is set on top of the Embar.

Ohio Oil Company's Irene Lindsay, C NW SE 23-56n-97w, has rig up; Orson Vail 1, C NW NE 23-56n-97w, Byron field, is drilling at 4410 feet.

Ohio Oil Company is coring at 3860 feet in Embar in Mill Iron Cattle Company 73, NE SW 19-46n-97w, Grass Creek field, Hot Springs County. Embar was topped at 3840 feet, where 7-inch casing is set. The well had the top of the saturation in the Embar at 3854 feet.

Sinclair Wyoming Oil Company's Muskrat 2-C, NE SW SW 1-33n-92w, deep test of unexplored sands on Muskrat gas structure, Fremont County, west central Wyoming, is drilling at 4718 feet, just below the Frontier. The company's Wertz 10-A Wertz, SE NW 7-26n-89w, projected deep test to undrilled horizons underlying the Wertz Dome gas field, Carbon County, south central Wyoming, is drilling at 3040 feet in the shale.

Nelson et al's Enos 1, W Lot 7, 27-3n-92w, in the Pilot Butte field, Fremont County, west central Wyoming, is drilling at 863 feet.

Tri-State Area

Mountain Fuel Supply Company's drilling operations in the tri-state area report as follows: Allen 1, NE SW SE 32-12n-97w, Powder Wash structure, Moffat County, northwestern Colorado, is reaming at 2020 feet; in Hiawatha field, Moffat County, Georgia Kuykendall 1, NE NE SE 22-12n-100w, is drilling at 2503 feet; W. T. Nightengale 1, SW NE NW 32-16n-104w, a quarter of a mile southwest of the nearest producer in South Baxter Basin gas field, Sweetwater County, southwestern Wyoming, is drilling at 2200 feet in shale; State 1, N WSE 16-3n-24e, Clay Basin structure, Daggett County, northeastern Utah, is drilling shale at 2200 feet.

Drilling Retarded

LACK OF PIPE LINE SLOWS CUT BANK DEVELOPMENT

Cut Bank, Mont.—Lack of pipe line outlet and suspension of crude oil takings by British-American Oil Company restrict activity in Cut Bank field largely to lease obligation drilling, most of which is on the Blackfeet reservation. Montana Power Gas Company continues with routine development.

Twenty-two tests are active in the field and one new location, H. S. Patterson's Chatterton 1, SE SE NE 23-32n-6w, south and west of the field, was announced.

After an absence of 5 years, Texas Pacific Coal & Oil Company returns to the Kevin-Sunburst field, Toole County, northern Montana, this week, spudding in NWc NE NE 21-35n-2w.

Three other new locations were spotted in the field: Pfabe & Engleking's McKee 1, 660 feet north of the south line and 1100 feet west of the east line of 7-35-1w; A. Beardslee's Swears 4, center east line SW NW 9-35-2w, drilling at 745 feet; and Mahile Oil Company's Van Note Farm 1, NW SW SW 30-35n-2w.

Cook & Eddy's Lerum 1, NE SE NW 25-36n-2w, will plug and abandon at 1917 feet. Sulphur water was encountered at 1915 feet.

Superior Oil Company's Haugen 5, SW SW NE 11-35n-3w, is acidizing at 1822 feet with a small show of oil.

Continental Oil Company's State 8, SE NE 16-35n-2w, is acidizing at 1578 feet. Oil rose 35 feet in the hole.

MOUNTAIN STATES Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY, (Cut Bank Field)—		
Montana Headlight Co., Yunck 6, csw nw 1-34n-6w	32	2781
Wilkinson, Alloted 1, 127, ne ne 1-32n-6w	200	3025
TOOLE COUNTY, (Kevin-Sunburst Field)—		
Coolidge & Coolidge, Hanlon 1, sw sw se 26-36n-2w	10	1860
Continental Oil Co., State 9, sw se 16-35n-2w	3	1563
WYOMING		
WASHAKIE COUNTY, (Hidden Dome Field)—		
Bruce C. Teeters' Gov't.-Brome 2, sw sw sw 30-48n-90w	720	1543
WESTON COUNTY, (Osage Field)—		
Charles Stough 2, swc sw nw 4-46n-63w	10	305
H. B. Wiltse 8, cnl nw ne 17-46n-63w	*	400
NEW MEXICO		
LEA COUNTY (North Eunice Field)—		
Magnolia, E. O. Carson 1, c nw sw 28-21s-37e	120	3775
LEA COUNTY (North Jal Field)—		
Gulf Oil Corp., Humphries 2, c ne nw 25-25s-36e	288	3350
LEA COUNTY (Monument Field)—		
Anderson-Prichard Prod. Corp., Britt-Conoco 3-A, se sw ne 7-20s-37e	6500	3885
Continental Oil Co., State 3-A-17, c sw sw 17-19s-37e	300	4011
Shell, State 1-F, c ne se 29-19s-27e	600	3943
Tide Water, State 2-F, c ne nw 20-19s-37e	125	4026

*Failures; †Junked; ¶Million cu. ft. gas.

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CALIFORNIA

WEEKLY STAFF REPORT

Los Angeles. — Mohawk Petroleum Company's Earl Fruit Company 1, sixteen miles southeast of Bakersfield, apparently has extended productive limits of Mountain View field southeast by more than a mile. The formation tester was set with the packer at 5965 feet and the hole opened to 6015 feet. The tester valve was open 45 minutes, during which time 42 stands of 36 gravity clean oil was recovered. Operator is now conditioning the hole for a mud test to cement 7-inch casing at 5965 feet.

Top of the Santa Margarita formation (upper Miocene), which contains the zone tested, was cored at 5753 feet, and it is reported that the bottom of the hole at 6015 feet is in the schist. Oil sand was also cored in the Kern River formation (Pliocene) from 5397-5427 feet, but a conclusive formation test of this interval was not obtained.

Earl Fruit Company 1 is located 1000 feet south and 1000 feet east from the northwest corner of Section 10-31s-29e. In this immediate area the Mohawk Petroleum Company controls all of Sections 3, 10, and 11, the E½ of Section 4, and SW¼ of Section 2, all in the same township.

Chanslor-Canfield-Midway Oil Company's Del Amo 23, near the center of Torrance field, 20 miles south of Los Angeles, was plugged back to 4400 feet and completed in the second zone pumping 90-100 barrels a day of clean oil. Depth is 4887 feet, with top of conglomerate zone cored at 4740 feet and top of the schist at 4837 feet. The conglomerate was but poorly saturated and water could not be excluded from the well without also shutting off the oil.

Franz-Nelson Petroleum Company's Huntington-Redondo 1, (formerly B. & N. Oil Company) 2 miles west of Chanslor-Canfield-Midway Oil Company's Del Amo 23, above, has been deepened by coring to 4823 feet, and the operator plans to run an electrical logging device and make a formation test before running casing. This well was originally completed at 3368 feet pumping at the rate of 100 barrels a day of 22 gravity oil cutting 10 percent, but sand troubles prevented steady production. Top of the nodular shale and of the schist conglomerate were cored at 4503 feet and 4811 feet, respectively, and the hole is temporarily bottomed in the conglomerate.

Extension Test Killed

Universal Consolidated Oil Company's Estrada 1, southeast edge of East Montebello extension, 12 miles east of Los Angeles, was killed after six months on production through a formation tester. The hole was drilled to 5950 feet, and 9-inch casing was cemented last October at 5550 feet. On January 20, 1936, the well was completed flowing through the tester set at 5850 feet. The initial rate was 301 barrels in 8 hours of 37.0 gravity oil cutting 30 percent, and 685,000 cubic feet of gas. The tester was removed and 420 feet of 6⅝-inch blank liner was cemented on bottom. The liner is being perforated by the gun method opposite selected sand members.

Eastern Oil Company's Eastern 1, semi-wildcat well at the east edge of Playa del Rey oil field 15 miles west of Los Angeles, is being cored ahead in oil sand-conglomerate zone at 7526 feet, and the operator intends to core to the top of the schist before recompleting. Top of the nodular shale was cored at 7268 feet, top of the oil sand was cored at 7398 feet, and the 7-inch water string was cemented and recemented at 7295 feet. The liner was run, and after the first week the production was still principally mud, weight material, heavy tar and gas. The liner recently was pulled for cleaning out, scraping the walls, and deepening. Before recompleting, a liner will be run and cemented through perforations at about the base of the nodular shale.

The Ohio Oil Company's K.C.L. D-1, 15 miles west of Bakersfield in Section 1-30s-26e, is being cored in shale at 8714 feet. Four feet of oil sand was recovered

CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
DOMINGUEZ—		
Shell, Reyes 7	365	6977
INGLEWOOD—		
Standard, Cone 19	500	3585
MONTEBELLO—		
Standard, Baldwin 86	215	3200
REDONDO—		
W. C. Roach, Security 2	125	3665
RICHFIELD—		
Union, Chapman 31	215	4475
TORRANCE—		
C. C. M. O., Del Amo 23	100	4887
LOS ANGELES COUNTY—		
Geo. L. Clayton No. 1	*	6765
BELRIDGE—		
Standard, McPhail 4	715	8465
FRUITVALE—		
Western Gulf, K.C.L. B. 22	200	3675
McKITTRICK—		
Calcrude Pet. Co. No. 4	60	1504
PREMIER—		
Standard, No. 11	235	2880
SAN MIGUELITO—		
C. C. M. O. Co., Hobson A-4	120	4813
SANTA BARBARA COUNTY—		
La Canada Oil Corp.'s Rhode Island 1	*	1399

*Failures; †Junked; ¶Million cu. ft. gas.

but

these* DARCOVA VALVE CUPS *traveled 3878 Miles in Oil Pumping Service

The place—Tulsa, Oklahoma. The time—from May 26th, 1925 until October 23rd, 1935 . . . during which the pump was operated three or four hours a day—6 days per week at a speed of 15 or 16 strokes per minute. It took a little mathematics to arrive at the actual *mileage* of this single set of valve cups. But it shouldn't take *any figuring* on your part to arrive at the conclusion that THE ORIGINAL COMPOSITION VALVE CUPS eliminate frequent re-cupping.

DARCOVA (Orange Label) the standard for more than thirty years under severe service at all depths.

DARVAL (Blue Label) for super-service in wells to approximately 2,000 feet in depth.

DARFLEX (Green Label) the popular favorite for wells to 800 feet in depth.

Manufactured Only By

DARLING VALVE & MFG. CO.

Williamsport, Pa.

in the core at 8697-8707 feet and 6 feet of shale was recovered at 8707-8714 feet. The well is located five miles north and ½ mile west from Shell Oil Company's K.C.L. 1, the discovery well of Ten Section oil field, which is producing from 7888 feet.

Ohio Oil Company's Title Insurance & Trust 1, in the Grapevine area 25 miles south of Bakersfield, is being drilled and cored ahead at 4850 feet in hard basalt. Operator plans to prospect ahead, with the possibility of finding sediments beneath the basalt which have not been materially affected by it. The well is in Section 36-11n-19w, about 8 miles east of Wheeler Ridge oil field and 1½ miles northeast of Reserve Oil & Gas Company's 1-33, which developed small production of gas at 4805 feet.

Republic Petroleum Company's Republic-Trust 1 is standing cemented with the 7-inch water string set at 5883 feet. Cores and an electrical logging device both showed interbedded shales and oil sand from the shut-off point to 6141 feet, with no evidence of water. A "barefoot" test probably will be made before running a liner. Well is located in Section 18-3s-13w, at the southwest edge of the Central area, Rosecrans field, 12 miles south of Los Angeles.

Petroleum Securities Company's Home Ranch 3, in the Bardsdale area 25 miles east of Ventura, is being cored ahead at 3997 feet in sand and shale with very few showings. Several formation tests have been made which developed mostly gas. Because of the discouraging showings in this well, Home Ranch 4 will not be drilled.

Barnsdall-Rio Grande Oil Company's Luton Bell 1, discovery well of Elwood oil field, Santa Barbara County, is being rigged up to deepen. This well originally was completed July 26, 1928, flowing 2500 barrels a day of 38.5 gravity oil cutting 0.1 percent. Depth is 3208 feet and 11¾-inch water string is cemented at 3155 feet.

WILDCAT PRODUCER

Producers committee no longer functioning

MICHIGAN

WEEKLY STAFF REPORT

Mt. Pleasant, Mich.—Goll, Graves & Mechling's Oard 1, SW SW SE, 18n-1w-25, Gladwin County, flowed and pumped 130 barrels the first 32 hours after acid treatment to definitely place the wildcat test in the commercial class.

The test is producing from Dundee lime, topped at 3496 feet, and bottomed at 3670 feet but plugged back to 3647 feet before treated. It was producing about 15 barrels daily on the swab before acid.

The Michigan Oil Producers Committee, a carry-over of oil code days, will cease to function as an active unit on August 15, it was agreed by its members and other producers in a meeting last week.

The committee was set up in the fall of 1933 to handle proration and to carry out code specifications in Michigan. When the code was ruled out, operators decided to continue with the committee as a general organization to recommend policy on various oil field matters.

Proration long since passed in Michigan following the decline in the Crystal flush field last fall, 1935, and since that time the committee has met at infrequent intervals only. However, during the period an office has been maintained in Mt. Pleasant handling statistical work on field production, etc.

During the past year much of the committee's work has been centered on brine disposal.

A. J. Wideman has been in charge of the office. James C. Graves acted as chairman of the committee throughout its entire existence.

It is planned to continue the organization in an informal way with part of the statistical work shifted to the Oil and Gas Association.

MICHIGAN SHOW

Gain over previous exhibits indicated

Mt. Pleasant, Mich.—Final arrangements for the second annual Michigan Oil & Gas Exposition to be presented

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JOHN J. WOELFLE, Manager

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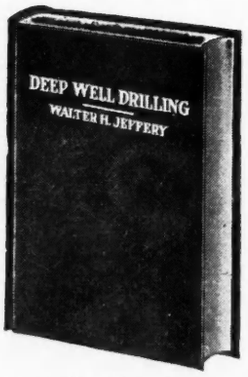
by

WALTER H. JEFFERY



New Chapters:

Geophysical Prospecting and Air Mapping.

Straight Hole Drilling and the Treatment of Crooked Holes.

Water Supply.

The Gas-Air Lift Method of Producing Oil.

A. P. I. Codes.

Preparatory to writing this book, the author spent weeks in a first hand study of modern methods of drilling by the rotary system, and of completing wells, controlling high pressures and operating wells in the deep fields of California and Oklahoma.

The third edition contains 816 pages, 150 pages more than the second edition, and 452 illustrations, price $6.00.

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in Mt. Pleasant, August 11 to 16, were being made this week with an outlook for a 25 to 50 percent gain in the number of exhibitors over the first show last September.

J. P. Carey, exposition secretary, said more than 75 exhibitors have taken display space for this year's show with nearly an equal number of other possible entries. Carey and other members of the exposition committee regard it particularly significant that many of the national supply houses and major oil companies are exhibiting this year. Last year's show was chiefly independent exhibitors.

An elaborate advertising program campaign throughout the state with numerous new "public interest" features is expected to bring an attendance of close to 100,000 persons for the week. Numerous oil companies have announced intentions of giving their employees one or more days "off with pay" to attend the exposition.

While the exposition will have as its basic appeal a trade show feature of new equipment for the industry, the angle of public interest in Michigan's rapidly developing oil and gas industry will be stressed by exhibitors.

The executive committee of the exposition includes R. I. Taylor, manager; Mr. Carey, secretary; William Cline, vice chairman of exposition; H. B. Lidstone, secretary of Chamber of Commerce; Henry G. Hunt, secretary Oil & Gas Association; Harry G. Gover, president Chamber of Commerce and Howard D. Atha, president of Oil & Gas Association.

MICHIGAN

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GLADWIN COUNTY—		
Goll, Graves, Mechling, Oard 1, sw sw se 18n-1w-25	126	3647
GRATIOT COUNTY—		
Associated Petroleum Co., Yutzey 1, se se sw, 10n-4w-26	*	3235
Wiser Oil Co., Townsend 1, c nw 10n-4w-10	¶1¼	980
LAKE COUNTY—		
C. W. Teater, McCabe Estate 1, ne sw sw, 20n-12w-26	*	3500
MECOSTA COUNTY—		
Stewart-Atha, Inc., Cogswell 2, 13n-7w, c se sw, sec 29	¶8½	1326
Sherrit Oil & Gas Co., Otterbin 1, 15n-7w, c se nw-13	¶1	1340
Ide & Glavin, Schuberg 2, 13n-7w, c ne nw-32	¶36	1296
MIDLAND COUNTY—		
Dibble Brothers, Lippert 1, 13n-1w, sw sw ne-7	50	3435
Jetter Oil Co., French 1, 13n-1w, ne sw se-14	*	3450
U. P. Oil Co., Hodge 1, 13n-1w, ne sw sw-18	30	3431
St. Louis Pipe Co., Hoyt 1, 13n-1w, se se ne-19	125	3440
MONTCALM COUNTY—		
Refiner Pet. Co., Mautersock 1, 12n-7w, c sw se-11	¶1½	1309
Swanson Oil Co., Flint 1, 10n-5w, se nw nw-11	110	3196
R. E. Gallagher, Bentley 1, 11n-7w, sw sw nw-33	*	3450
TUSCOLA COUNTY—		
V. R. D. Kirkham, Boyce 1, 14n-7e, sw sw nw-24	35	2860

*Failures; †Junked; ¶Million cu. ft. gas.

EASTERN FIELDS

WEEKLY STAFF REPORT

Completions

KENTUCKY

Company, Well and Location	Init. Prod. Bbls.	Depth
McLEAN COUNTY—		
Rough River Corp., Louisville Joint Land Bank 2	*	-
Hupp & Kentucky Producers, Mary Wilson 1	30	....
Imperial O&G Products Co., Freeman 4	10	....
Hupp & Duff, Tanner tract 6	90	....
J. C. Miller, Henniger 3	5	....
George Randolph, Nalley 1	*	....
J. B. Mayer & Co., Crowe 8	10	....
Dameron & Co., Garman 1	5	....
J. C. Ellis, Storey 1	*	....
B. B. Oil Co. & Co., R. Hinton 1	120	....
Morton Heirs 1	35	....
Hoosier Oil Co., Morton 1	*	....
HENDERSON COUNTY—		
Imperial O&G Co., Aaron Freeman 4	10	....
MUHLENBURG COUNTY—		
Ohio Oil Co., Kennedy 2	30	....
OHIO COUNTY—		
Kentucky Nat. Gas Co., Rodgers 16	40	....
Vickers & Co., Jones 10	*	....
Teller & Co., Medcalf 2	15	....
Cane Run Pet. Co., Bellamy 9	60	....
Kentucky Nat. Gas Co., Powers 5	8	....
F. D. Clark & Co., White 1	10	....
Petroleum Expl. Co., Graham 8	10	....

INDIANA

Company, Well and Location	Init. Prod. Bbls.	Depth
GIBSON COUNTY—		
Euclid Oil Co., Mumford & Watkins 9	50	....
DAVIESS COUNTY—		
Albert Bachelor, Reinsel 1	¶	....
KNOX COUNTY—		
Bruce Cloud, Waldren 1	¶	....
Lloyd & Parker 2	¶	....
JAY COUNTY—		
Lon Wherly, Wherly 1	¶	....

OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
ATHENS COUNTY—		
Ohio FG Co., Mooney 1	¶	1260
State of Ohio 3	¶	1722
Carpenter & Glaizer, Curtis 18	*	203
Bowman Bros., Armstrong 3	¶	805
Cross & Co., John S. Gibbs 1	¶	1120
Robinson & Co., Ellott 1	¶	452
WASHINGTON COUNTY—		
Williams Bros., McLaughlin 6	*	1210
Leyde O&G Co., Leyde 1	*	....
Ohio FG Co., Knox 1	*	....
Bailey O&G Co., Graham 1	*	....
Henry O&G Co., Mulinex 1	¶	....
MEDINA COUNTY—		
Edson & Son Co., Williams 2	¶	....
Williams 1	*	....
Oko O&G Co., McVickers 48	1	....
Curtis & Eaken, Brown 14	1	....
MEIGS COUNTY—		
Meigs Dev. Co., Gandee 1	¶	....
MONROE COUNTY—		
Staudt & Co., Jackson 2	¶	....
Pearl V. Parks, Parks 1	25	....
Newhart & Co., Blair 1	¶	....
MORGAN COUNTY—		
W. L. Swingle, Trustee, Blind 1	*	....
Burt & Co., Tuttle 1	3	....
MUSKINGUM COUNTY—		
Ohio FG Co., Skinner 1	*	....
Hopewell F&G., Middleton 1	¶	....
NOBLE COUNTY—		
F. M. Aiken, Inc., Dyer 74	*	....
D. Bean & Co., Turner Estate 2	1	....
Larrick & Rich & Co., Murphy 1	5	....
PERRY COUNTY—		
Allegheny Oil Co., Longstreth 21	3	....
C. L. Bullock & Co., Monahan 5	5	....
Preston Oil Co., Rhoades 1	10	....
VINTON COUNTY—		
Kelch O&G Co., Kelch 3	1	....
COSHOCTON COUNTY—		
Upham Gas Co., Spurgeon 1	¶	....
Preston Oil Co., Beatty 3	*	....
HOLMES COUNTY—		
S. J. Bell & Co., Finley 2	¶	....
Ohio FG Co., Tidball 1	¶	....
ASHLAND COUNTY—		
R. C. Jones, C. R. Fox 3	*	565
TUSCARAWAS COUNTY—		
Capital Drilling Co., Stewart Asher 6	¶	3732
SENECA COUNTY—		
Tiffin Industrial Gas Co., C. Conrad 1	¶	485
L. & J. Hoover 4	¶	490
STARK COUNTY—		
East Ohio Gas Co., S. Sogorka 1	¶	4272

*Failures; †Junked; ¶Million cu. ft. gas.

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Proved by 10 years' service on tough wells. DIAMOND CHAIN & MFG. CO., 485 Kentucky Ave., Indianapolis, Ind.
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THE OIL WEEKLY REPORT ON IMPORTANT *Wildcat Tests*

ALABAMA

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 2, se nw sw 9-3n-29e, elev 191 ft, sd for heavier rig 4002 ft, possible base Tuscaloosa.

MOBILE COUNTY—J. C. Prine's King 1, 4-1n-4w, pb to perf and test 2500-2600 ft, old td 3186 ft. Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

BRADLEY COUNTY—Phillips Pet. Co.'s Murphy Land Co. 1, nw nw 12-17-11, elev 91 ft, top Permian lime 4900 ft, arr core 4920 ft lime.

CLEVELAND COUNTY—Diffie et al's L. C. Ross 1, sw ne 1-11-11, wocs 100 ft. R. L. Saxon's L. C. Tipton 1, sw ne 13-11-12, dk. J. R. Lockhart's Robertson 1, se se 36-10-11, dk.

DALLAS COUNTY — McCall & Kelly's Owens 1, nw sw 26-10-16, owdd, cmt 4½ in cas 1445 ft, td 1456 ft.

HEMPSTEAD COUNTY—H. D. Easton et al's Conway-Tiller 2, sw sw 34-12s-27w, lcn. Buffalo Oil Co.'s Lafferty 2, 17-14-24, arr deepen 2415 ft.

LITTLE RIVER COUNTY—M. E. Sanderson's Penning 1, ne sw, woc 10-in csg 168 ft.

LONOKE COUNTY—J. F. Russell's Gunter 1, se se 17-5-10, dk.

MILLER COUNTY—Deep Rock Oil Corp.'s Williams 1, nw sw nw 6-16-25, elev 232 ft, top Coquina lime 4304 ft, top oolitic lime 4370 ft, coring 4405 ft, dense lime. Joiner et al's Montana Realty Co. 1, nw nw 3-17-28, coring 3115 ft, brown shale. McClanahan et al's Miller Lbr. Co. 1, sw sw 2-18-28, 15½ in csg 250 ft, dr 1250 ft. Montana Lbr. Co. 1, sw sw 2-20-27, rig up, sd.

OUACHITA COUNTY—O. F. Whittaker's Howard 1, 29-12-16, coring 2450 ft, shale. J. M. Ferris' G. Dean 1, ne se nw 16-15-17, owdd, td 2997 ft. Edwin M. Jones' J. D. Reynolds A-1, sw sw 27-15-15, pits dug, sd. J. D. Reynolds A-2, sw sw 27-15-15, lcn. E. Murphy 1, ne ne 28-15-15, lcn; E. Murphy 2, nw ne 28-15-15, lcn. Lion O. R. Co.'s Reynolds-Berg 1, se se ne 28-15-15, elev 105 ft, pb to 4806 ft, testing, old td 5247 ft. Phillips Pet. Co.'s Arnold 1, ne sw 27-15-15, elev 207 ft, flowed 80 bbls fluid, some oil and made 5,253,000 ft gas in 24 hrs thru tubing choke, tubing pressure 90 pounds, casing pressure 850 pounds, td 4914 ft; Cheatham 1, sw ne 27-15-15, circulating, td 4910 ft; Ferris 1, nw se 27-15-15, rn and sd; Rose 1, ne se 28-15-15, circulating 4819 ft. Jno. Pugh's Hildebrandt 1, se se 28-15-15, tested sw, sd 4935 ft lime.

PULASKI COUNTY—G. L. Kiselman's Fee 1, 2-1-13, 10-in csg 100 ft, td 200 ft.

UNION COUNTY—J. C. Buckbee, Tr.'s Ezzell 2, sw ne nw 13-17-15, elev 255 ft, coring 5750 ft, red shale. Mrs. Mamie McCurry et al's Slaughter 1, se se 9-17-16, dr 3490 ft, red shale. Phillips Pet. Co.'s E. Morgan 1, 18-18-17, spd 38 ft sand.

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK—Mohawk Pet. Co.'s Langer 1, 30-16-15, lcn. Western Gulf's S. P. L. Co. 3, 3-17-15, dr sand and shale 8002 ft.

CURRY MOUNTAIN—Standard's Camino 7, 1-21-15, dr blue shale and gray sand 1966 ft.

KERN COUNTY

RIO BRAVO—Associated's No. 1, 30-29-25, lcn.

GRAPEVINE—Associated's Tejon 1, 17-11-19, dr sand streaks hard shale 485 ft. Hall-Baker Co.'s No. 1, 12-10-19, td 2377 ft, plug 2259 ft, running formation tester. Ohio's T. I. T. 1, 36-11-19, dr basalt 4850 ft. Reserve Oil & Gas Co.'s Ritchie 33-2, 33-11-19, dr shale 3495 ft; Tejon 2-61, 2-10-19, rur.

LOST HILLS—Associated's Williamson 2, 2-26-20, td 1143 ft, pumping 8.3 bbls gross, cut 16 percent. Standard's United 1, 2-26-20, td 6887 ft, fsh.

SOUTH MARICOPA—E. A. Bender's Robinson 1, 14-10-23, dr shale 840 ft.

JASMINE—Cochran Oil Co.'s Bishop 1, 31-25-27, dr brown shale 2710 ft. Doyle Pet. Co.'s Quinn 1, 15-25-27, dr sandy shale 1560 ft.

DEVIL'S DEN—Den Pet. Co.'s Bates 1, 20-25-19, td 1287 ft, plug 450 ft, to redr.

ELK HILLS—Elk Hills Pet. Corp.'s No. 1, 14-31-24, dr shale 4582 ft.

ARVIN—General's Arvin 1, 26-31-29, spud 7/20, 13⅜ in at 894 ft.

POSO CREEK—McAdams Oil Co.'s No. 1, 32-27-28, td 1903 ft, redr in old hole at 1883 ft.

DOMINION — Modoc Pet. Co.'s Vedder-Bowles 2, 21-26-28, td 1537 ft, bailing.

MOUNTAIN VIEW—Mohawk Pet. Co.'s Earl Fruit 1, 10-31-29, td 6015 ft in schist, top Santa Margarita 5753 ft, formation tester placed 5965 to 6015 ft, recovered 42 stands of 36 gravity oil in 45 minutes, to cement 7 in at 5965 ft. Treasure Dr. Co.'s No. 1, 12-30-28, sd 5398 ft.

STRAND—Ohio's K.C.L. D-1, 1-30-25, dr sand and shale 8760 ft.

FRUITVALE—Ohio, Inc., "O" 1, 26-29-27, spud 7/20, dr 506 ft.

NORTH BELRIDGE—Rio Grande Oil Co.'s Layman 1, 18-28-20, dr brown shale (lower Miocene) 1955 ft.

COMANCHE POINT — Tejon Ridge Oil Co.'s Tejon 1, 23-32-29, sd 2462 ft.

SAN EMIDIO—Texas Co.'s K.C.L. C-11-49, 11-11-22, td 8085 ft, r to set casing.

MISCELLANEOUS

ALAMEDA COUNTY—Seaboard Oil Corp.'s Johnson 1, 13-3-3, spud 7/20, wocs 13⅜ in at 505 ft.

HUMBOLDT COUNTY—Texas Co.'s No. 2, 22-3-1, td 4428 ft, recovered dr pipe to 2218 ft, washing over.

KINGS COUNTY—Associated's Avenal 1, 35-23-17, td 1956 ft, redr at 1485 ft. Herndall & Associate's Spreckles 1, 16-24-18, td 4201 ft, plug 1985 ft to test. Milheim Oil Corp.'s No. 1, 7-23-23, td 1838 ft, to deepen.

MADERA COUNTY—Pure Oil Co.'s Chowchilla 5, 12-10-13, rig.

MERCED COUNTY—E. R. Fant's Cunningham 1, 22-7-16, lcn. San Joaquin Oil Co.'s San Joaquin 1, 1-12-11, spud 7/18, wocs 13⅜ in at 1000 ft.

SAN BENITO COUNTY—Associated's Murphy Ranch 1, 5-12-4, td 350 ft, changing to elec. equip.

SAN JOAQUIN COUNTY — Standard's Weyl-Zuckerman 1, 25-2-4, dr shale 1944 ft.

SOLANO COUNTY—Amerada's Hoppe 1, 22-4-2, rur. Standard's Anderson 6-1, 35-4-2, dr gray shale 3733 ft.

TEHAMA COUNTY—Northern Co.'s Pet. Co.'s Ewers-Mooney 1, 25-24-3, td 8060 ft, co to deepen.

TULARE COUNTY—J. W. Alford's Williams 1, 28-16-23, rig. W. H. Fortine's Mosesian 1, 22-27-26, td 3120 ft, plug 2719 ft, wocs 6⅝ in at 2626 ft. Trico Oil & Gas Co.'s Calif. Western 1, 7-23-23, rig.. Callison 1, 27-21-25, rig.

MONTEREY COUNTY—Shell's Branch 1, 34-24-10, sd 8994 ft.

SAN LUIS OBISPO COUNTY

ARROYO GRANDE—Avila Oil Co.'s Gibson 1, 10-31-13, dr hard shale 2404 ft. Birch-Royer Oil Co.'s Patchett 1, 33-31-13, td 1840 ft, redr at 1745 ft. Blue Ridge Oil Co.'s Carpenter 1, 5-32-13, grade. Crail Bros.' Vedder 1, 8-32-13, dr hard shale 2300 ft. A. T. Jergins Trust's Roderiguez 1, 5-32-13, dr brown sandy shale 2740 ft; Roderiguez 2, foundation. Pismo Pet. Co.'s Scott 2, 5-32-13, rig.

PANORAMA HILLS—United Foreign Oil Co.'s No. 2 (formerly United Oil Co.), 2-32-21, dr brown shale 1510 ft, reports are that several showings of oil have been encountered, hope to complete in lower portion of Santa Margarita.

SANTA BARBARA COUNTY

COAL OIL POINT—Bankline Oil Co.'s No. 2, permit 191, dr shale 3750 ft.

LOMPOC—O. C. Field's Santa Rita 1, 11-7-33, dr shale 1880 ft. Lompoc Pet. Co.'s Beauterbough 2, 18-7-34, sd 3940 ft. Top Row Oil Co.'s Spanne 1, dr 325 ft. York Oil Co.'s York 2-A, 33-8-34, td 1250 ft, tested 20 bbls net rate, cut 50 percent.

EL CAPITAN — La Canada Oil Corp.'s Rhode Island 1, 3-4-30, abn at 1399 ft.

BETTERAVIA—E. H. Moore's Union Sugar A-1, 25-10-35, dr shale 5310 ft.

VENTURA COUNTY

BARDSDALE—Bestco Pet. Co.'s Frey 1, 2-3-19, td 4512 ft, plug 4000 ft, sd. El Rancho Oil Co.'s Elkins 1, 9-3-19, td 4925 ft, formation tester recovered 12 stands gas cut mud, some oil in 30 minutes. Layning & Jacobs' No. 1, td 1275 ft, sidetracking.

OXNARD—General's McGrath 2, 26-2-35, dr hard shale 8664 ft.

SOUTH MOUNTAIN—Honolulu Oil Corp.'s Hobson 1, 23-3-21, dr oil sand 2350 ft.

SESPE CANYON—Merchants Pet. Co.'s No. 1, 1-4-20, material.

SHIELLS—Texas Co.'s Shiells 129, 4-3-19, sd 4812 ft; Shiells 130, dr shale 3971 ft; Shiells 131, td 3355 ft, tested good for 110 bbls 35 gravity oil, cut 2.5 percent.

OXNARD AREA—Vaca Oil Explor. Co.'s Calif. Lands 1, 6-1-21, rur.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, dr sand streaks shale 8749 ft.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall's Rancho S. F. 1, 26-4-17, bldg rig. Holbrook Pet. Corp.'s Newhall L. & F. Co. 1, 26-4-16, td 1711 ft, wocs 13⅜ in at 700 ft. Yant Pet. Corp.'s Yant 5, 1-3-16, dr shale 2360 ft, topped Eocene at 2348 ft; Yant 6, rig.

ARTESIA—M. T. Bernstein's Millard 1, 25-3-12, dr silty shale 4680 ft.

TORRANCE—Codri Oil Co.'s No. 1, 28-4-13, td 3902 ft, plug 3710 ft, bailing. Jas. S. Hull's No. 1, 20-4-13, td 4012 ft, pumping water, trace of oil. McDowell Oil Co.'s McDowell Com. 1, 35-3-14, td 4637 ft, co.

GARDENA—Crude Oil Dr. Co.'s No. 1, 31-3-13, rur.

WILMINGTON—General's Terminal 1, dr 4400 ft; Terminal 2, grade. Richfield's Kelinmeyer 1, 20-4-13, rig. Royalty Service Co.'s Banning 10-1, 28-4-13, lcn; Banning 11-1, dr shale streaks gray sand 3326 ft.

PUENTE—McVicar-Rood's Sentous 1, 6-2-9, td 3120 ft, plug 1180 ft, recemented 8⅝ in at 875 ft, testing.

PALOS VERDES—Pamaco Royalty Co.'s Burkhard 1, 2-5-14, rig.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper.*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so & g—*show oil and gas.*
fsg.—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

ROSECRANS—Republic Pet. Co.'s Trust 1, 18-3-13, td 6141 ft, wocs 7 in at 5883 ft.

EL NIDO—Shell's Lloyd-Dabney 1, 33-3-14, dr shale streaks sand 5021 ft.

LAWNDALE—Signal Finance Co.'s Woods 1, 10-3-14, dr sand and shale 5808 ft.

EAST SANTA FE—Vanda Pet. Corp.'s Loftus Land 1, 4-3-11, dr shale 2960 ft, top tar sand 2212 ft.

DOMINGUEZ—West American Oil Co.'s Del Amo 1, 3-4-13, td 9000 ft, plugging back by stages and testing.

ORANGE COUNTY — Calif. Eastern Oil Co.'s Verde 1, 35-3-9, dr hard sand and conglomerate 4390 ft. Hillman & Long's Westminster 1, 14-5-11, dr hard shale 7955 ft. Shell's Anaheim Sugar 3-1, 7-6-10, dr sand and shale 3058 ft.

SAN BERNARDINO COUNTY—Equitable Pet. Explor. Co.'s No. 1, 11-10-5, td 2541 ft. repair equip. Chino Pet. Corp.'s Abacherle 2, 12-3-8, dr shale 490 ft. Tehama Pet. Co.'s Kraemer-Bachs 2, 33-2-9, sd 495 ft; Pellisier 1, 4-3-8, dr hard shale 765 ft.

COLORADO

ADAMS COUNTY — Oklahoma Oil Co. (formerly Reddle Petroleum Co.) Baxter 1-C, sw 2-3s-6e, dr 1754 ft.

ARCHULETA COUNTY — Oil City Petroleum Co. & Archuleta Oil & Gas Co. Reeder 1, swc Lot 5, 24-33n-2e, dr 1160 ft.

BOULDER COUNTY — Boulder Prod. & Drilling Co. Maxwell 2, sw sw ne 24-1n-71w, dr 130 ft.

LARIMER COUNTY—Continental Oil Co., Buckeye U. P. 8, cne sw 31-10n-68w, dr 3713 ft.

MONTEZUMA COUNTY—Coon & Teague (McElmo Oil Co.) West 1, ne nw nw 31-36n-17w, td 3960 ft. Making 1 bbl oil daily.

MORGAN COUNTY—Swisher et al Lunt 1, sw sw sw, dr 1460 ft.

PARK COUNTY—South Park Oil Co. State 1, se se sw 16-11s-75w, landed 4¾-in csg at 4530 ft. Co to bottom at 4586 ft. South Park Oil Co. LeBert 1, ne ne nw 21-11s-75w, dr 550 ft. South Park Oil Co. Lemarr 1, ne ne se 34-11s-75w, ru.

WASHINGTON COUNTY — Indian Territory Illuminating Oil Co., Foster Mining Corporation, and Carter Oil Co. Vance 1, cne ne 28-1s-49w, dr 4460 ft.

YUMA COUNTY—Indian Territory Oil Co. Strangways, cnw sw 21-2s-43w, dr 5279 ft. Reported at this depth but not confirmed.

WELD COUNTY—Continental Oil Co. State Bank of Trenton 1, csw ne 21-8n-59w, dr in dry sand at 6731 ft in top at 6695 ft.

FLORIDA

JACKSON COUNTY—Mrs. Mamie Hammonds et al's Grandberry 1, sw sw ne 15-5n-9w, elev 124 ft, dry and abn, td 5015 ft.

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, elev 120 ft, coring 4888 ft, slightly argillaceous limestone.

NASSUA COUNTY—St. Mary's River Oil Corp.'s Bank of Hilliard 1, 19-4n-24e, reset surf cas 345 ft.

KANSAS

BARBER COUNTY — Sinclair Prairie Oil Co.'s Gentry 1, ne ne ne 1-33s-15w, set 12-in csg 455 ft.

BARTON COUNTY — Schermerhorn Oil Co.'s Hunter 1, ne ne ne 29-18s-15w, pb 3518 ft, 18,000,000 cu ft gas. Rosespring Drlg. et al's Rick 1, sw sw sw 1-19s-11w, acidizing. Brouk et al's Keil 1, se se ne 11-16s-15w, ur 6-in csg 3040 ft. Rose & Lant's Redetzke 1, ne nw nw 10-16s-11w, dr 1115 ft. Yernell & Carlson's Rath 1, ne ne ne 35-18s-12w, sd 200 ft. John Burton et al's Wendel 1, ne ne ne 13-19s-11w, set 12-in csg 555 ft.

BUTLER COUNTY—Ellis et al's Pettit 1-A, se se nw 21-28s-6e, td 3163 ft, pumped 53 bbls oil and est 600 bbls water, compl. McGinnis et al's Hinnen 1, ne ne sw 18-24s-4e, td 2550 ft, D&A. Dalton et al's Miley 1, csw ne 17-27s-5e, sd 350 ft. W. P. Hildebrand et al's Farab 1, sw sw se 5-29s-6e, cel.

CLARK COUNTY — Olson & Watchorn's Morrison 1, cse sw 17-32s-21w, dr 4368 ft.

COWLEY COUNTY—Morton et al's Rogers 1, se se ne 1-31s-4e, dr 2430 ft.

EDWARDS COUNTY — Stanolind-Elwell's Donovan 1, cse se 14-25s-18w, show gas 4569 ft.

ELLIS COUNTY—Rosespring et al's Union Pacific 1, ne ne ne 9-13s-20w, fsg 3783 ft. Empire's Herl 1, se se se 22-15s-19w, dr 3100 ft. Jones & Shelbourn's Gunther 1, se se sw 9-11s-19w, ur 8-in cas 2900 ft. Vickers Pet. Co.'s Kraus 1, sw sw nw 22-14s-19w, co 3604 ft. Bradley Oil et al's Penny Wann 1, se se se 13-15s-20w, dr 3403 ft. Empire's Samuelson 1, ne ne sw 31-11s-16w, dr 1435 ft. Kansas Development Co.'s Haller 1, se se nw 10-11s-18w, 1600 ft oih, td 3054 ft. Bridgeport Mach's Ubert 1, ne ne nw 12-13s-18w, dr 2235 ft. Philham Oil Co.'s Gerstner 1, sw sw se 24-14s-17w, dr 2495 ft. Trigg et al's Armbrister 1, se se sw 6-11s-19w, dr 2975 ft. Lario O&G Co.'s Cress 1, ne ne ne 13-11s-17w, loc. Champlin Ref. et al's Hadley 1, se sw ne 30-11s-17w, dr 106 ft. Lario O&G Co.'s Marshall 1, nw se ne 36-11s-18w, dr 850 ft. Frank Hamilton et al's Sack 1, nw nw se 26-13s-19w, rot rig. Twin Drlg. et al's Schmidt 1, sw sw ne 22-15n-17w, dr 1435 ft. Murphy Oil Co.'s Wiesner 1, se se sw 12-14s-19w, loc. Ted Kerr et al's Koblitz 1, se sw nw 23-12s-18w, spd and sd. Wolf Creek et al's Polifka 1, sw sw ne 24-13s-18w, spd.

ELLSWORTH COUNTY—York State Oil Co.'s Koestle 1, nw nw se 12-17s-9w, dr 3020 ft. Roy Ramsey et al's Gregory 1, sw sw se 25-16s-9w, td 3323 ft, D&A. Carter Oil et al's Kruse 1, se sw ne 37-17s-8w, dr 1479 ft.

GREENWOOD COUNTY—McGinnis' Lampe 1, nw ne sw 26-4s-8e, dr 1800 ft. Guy Scott et al's Pedroja 1, se ne se 6-26s-10e, sd 1080 ft.

HARPER COUNTY—Marathon Oil Co.'s Zellers 1, csw nw 17-35s-8w, dr 5705 ft.

HARVEY COUNTY—Harburney Oil Co.'s Scrag 1, nw nw se 24-22s-3w, sd 3110 ft. Shawver's Judd 1, sw se ne 3-24s-2e, dr 2995 ft. Phillips Pet. Co.'s Kaufman 1, ne ne nw 2-22s-2w, td 3453 ft, D&A. Empire Oil Co.'s Schmidt 1, nw nw se 31-20s-2e, mim.

HASKELL COUNTY—Helmerich & Payne et al's Jones 1, cse 34-26s-34w, td 2515 ft, rust.

KINGMAN COUNTY — McBride's Wooldridge 1-A, sw ne se 16-27s-7w, dr 800 ft.

LINCOLN COUNTY—Graham et al's Smiley 1, ne nw nw 26-10s-9w, rr.

LYON COUNTY—Becker Bros.' Rossillion 1, se sw ne 19-21s-11e, dr 900 ft.

MARION COUNTY — Empire Oil Co.'s Schmidt 1, nw nw se 31-20s-2e, ru.

McPHERSON COUNTY—Johnson et al's Johnson 1, sw sw nw 33-17s-1w, td 3332 ft, D&A.

NESS COUNTY—Newton Dev. Co.'s Tenny 1, nw nw se 19-18s-25w, td 3954 ft, woc. Continental Oil Co.'s Thompson 1, ce½ e½ sw 13-18s-26w, pb 4492 ft, 2000 gals acid, no test. Sayre Oil Co.'s Ryersee 1, cne se 34-18s-21w, loc.

PAWNEE COUNTY—Kessler & Their et al's Gustafson 1, sw sw sw 27-20s-16w, dr 160 ft. Simpson Oil et al's Gates 1, sw sw sw 13-20s-16w, brr.

RENO COUNTY—Rosespring et al's Swanson 1, ne ne nw 1-23s-5w, td 3954 ft, woc. Dickey Oil Co.'s Shepherd 1-A, ne ne nw 22-26s-9w, pb 4035 ft, to acidize. Miller et al's Detter 1, ne se nw 28-22s-7w, dr 1910 ft. Pryor & Lockhart et al's Kerr 1, cnw 23-23s-8w, dr 605 ft. Foraker et al's Hiett 1, se sw ne 34-24s-4w, sd 3190 ft. Continental & Wentz' Snook 1, ne nw sw 10-22s-8w, dr 1770 ft. Graham et al's Miller 1, ne ne se 36-25s-10w, cor 3407 ft.

RICE COUNTY—Gilmac Oil Co.'s Sargent 1, se se se 31-18s-6w, dr 3465 ft. Beardmore et al's Fuller 1, sw sw se 23-18s-7w, sd 3495 ft. Saco Oil Co. et al's Haxton Est. 1, nw nw ne 30-19s-8w, dr 1360 ft. Simpson & Nobles' Pulliam 1, cs½ n½ ne 35-19s-8w, so 3569 ft. Simpson, Noble & Stanolind's Bowman 1, sw sw nw 22-19s-10w, pot 50 bbls oil and 450 bbls water. Sage et al's Patton 1, sw sw sw 5-21s-7w, dr 1880 ft. Shell Pet. Corp.'s Gordon 1, cw½ w½ ne 21-21s-10w, dr 2840 ft. Shell's Maughlin 1, 11-20s-8w, prep to dd.

ROOKS COUNTY — Skaer Oil Corp. & Reese's Dryden 1, ne ne ne 28-10s-17w, td 3657 ft. Lester & Dean's Burtt 1, se se ne 29-10s-20w, ur 8-in csg 2893 ft. Helmerich & Payne's Bedard 1, cne 29-9s-19w, set 5-in csg 3625 ft, co. L. C. D. Drlg. Co.'s Westhusin 1, cne se 11-19s-17w, dr 1296 ft. Hartman & Blair et al's Hall 1, nw nw nw 25-10s-17w, dr 2755 ft.

RUSH COUNTY—Boyle & Grossman's Wilson 1, ne ne ne 33-17s-19w, dr 3875 ft. Skeeles et al's Grumbein 1, sw sw ne 7-16s-20w, cellar.

RUSSELL COUNTY—Hartman & Blair's Johnson 1, nw nw nw 11-13s-14w, td 2023 ft, pb 1235 ft, dr 1680 ft. Lario O&G Co. et al's Steinert 1, nw nw sw 21-15s-15w, dr 2135 ft. Lee & Reser's Penix 1, sw sw se 13-14s-13w, set 6-in csg 2900 ft. Coralena Oil Co.'s L. A. Sellens 1, nw nw nw 17-15s-13w, ru.

SALINE COUNTY—Ryan Consolidated & Archer's Norton 1, ne ne ne 30-14s-2w, dr 1710 ft.

SEDGWICK COUNTY—Wakefield et al's Howard 1, se se ne 25-25s-2e, dr 576 ft. Lauck's McLean 1, csw se 1-27s-1w, dr 1486 ft.

SHERIDAN COUNTY—O. A. Roberts et al's Corrick 1, cnw 34-9s-26w, loc.

STAFFORD COUNTY—Lebow et al's Wolf 1, se sw nw 3-21s-12w, fsg 2335 ft. I.T.I.O. Co.'s Mellies 1, cn½ n½ ne 6-22s-11w, ru.

SUMNER COUNTY—Matthews & Derrington's Berry 1, nw nw se 14-25s-1e, sd 3755 ft. Wilson et al's Clark 1, csl nw 15-35s-1w, sd 4430 ft. The Texas Co.'s Reed 1, ne se se 11-31s-1w, sd 3385 ft. Pryor & Lockhart's McCowen 1, ne ne sw 18-32s-1w, br.

TREGO COUNTY—Central Commercial's

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Wagg 1, nw nw se 17-31s-21w, pb 3910 ft, td 4563 ft. Hall et al's Deines 1, se se se 12-13s-24w, dr 3121 ft. G. M. Pigott, Inc., et al's Burkett 1, csw 15-11s-22w, loc. McNeely et al's John Lemke 1, nw nw sw 7-11s-22w, set 10-in csg 110 ft, woc.

WOODSON COUNTY—Lewis et al's Riggs 1, sw sw sw 10-26s-14e, dr 1225 ft. Ladd et al's Millner 1, nw sw nw 34-25s-14e, rum.

SOUTH LOUISIANA

CALCASIEU PARISH — Union Sulphur's Wurmnest 1, South Lake Charles prospect, sec 9-11s-8w, ru.

CAMERON PARISH—Magnolia's Hebert 1, Big Lake area, sec 13-12s-9w, dr shale 9290 ft.

EAST BATON ROUGE PARISH—Cavalier Oil Co.'s Vignes 1, sec 40-8s-2e, woc 1470 ft.

IBERIA PARISH — Texas Co.'s Fausse Point 2, Fausse Point prospect, sec 35-11s-8e, dr shale 4170 ft; same operator's Vermilion Bay B-1, Vermilion Bay prospect, sec 16s-5e, dr shale 4099 ft.

JEFFERSON PARISH — Triangle Oil & Land Co.'s Carrol 1, sec 125-12s-11e, dk.

JEFFERSON DAVIS PARISH—Stanolind's Calcasieu National Bank 1, South Jennings prospect, sec 15-10s-3w, dr shale 8030 ft. Strake's Miller Estate 1, Woodlawn prospect, sec 7-9s-5w, abn 8605 ft.

ST. BERNARD PARISH—John Cartwright's Nunes 1, e of New Orleans, sec 10-13s-12e, dr shale 5149 ft.

ST. MARY PARISH—Mike Hogg's Lawes Realty Co. 1, near Charenton, sec 30-13s-10e, dr oil sand 4181 ft.

ST. MARTIN PARISH—Texas Co.'s Lake Mongouloui 2, Lake Mongouloui prospect, sec 14-10s-9e, dr shale 7302 ft; same operator's St. Martin Land Co. 8, Henderson prospect, sec 9-8s-7e, abn 8871 ft.

VERMILION PARISH—Continental's Hebert 1, Abbeville prospect, sec 20-12s-13e, dr shale 11,026 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Bowles et al's Bank of Ringgold 1, ne ne 3-15n-9w, lcn. DeSoto O&G Co.'s Dunn & Olsen 1, n½ nw 15-16n-10w, spd. J. W. Leonard et al's Courtney 1, se ne 5-17n-7w, 9 in csg 2450 ft, top red beds 3600 ft, coring 3670 ft red beds. Rondeau et al's Locke 1, ne nw ne 9-15n-10w, rur. Walters et al's Davis 1, se sw 5-16n-9w, dk.

BOSSIER PARISH — Humphreys et al's Bulkley 1, 35-21n-13w, dr 600 ft. Bailey Drlg. Co.'s (formerly Bowman & Tidwell) Nattin 1, 15-22n-14w, sd 2650 ft. Producers O&G Co.'s Skannal 1, w½ sw 22-17n-12w, elev 164 ft, dr 5095 ft lime and shale. United Gas Pub. Serv. Co.'s H. L. Skannal D-1, ne ne 22-17n-12w, tested sw 5315 ft, pb to 5182 ft, tested sw so, woc 5025 ft. Triangle Drlg. Co.'s Skannal E-1, c s½ 23-17n-12w, gas killed at 4388 ft, dr 4600 ft.

CADDO PARISH—Dalton Dev. Co.'s Noel 1, 4-21n-14w, sd 1065 ft, top Nacatosh 805 ft. Fallon Oil Co.'s Cupples 1, 24-16n-13w, 16-in cas 190 ft, dr 1700 ft chalk. Gulf Oil Corp.'s Hatcher 1, 11-17n-15w, 16-in csg 150 ft, dr 1100 ft. J. B. Hutchinson, Tr.'s Colquitt 1, ne nw 28-16n-13w, 10-in csg 40 ft, dr 350 ft. Prairie River Synd.'s (J. E. Smitherman et al), Hutchinson 1, sw nw 15-15n-12w, anhydrite 3985-4475 ft, logged bed dense lime 4515-35 ft, recovered 18 ft lime with so dead oil in fractures 4535-55 ft, missed ds test, ran electrical tester arr core ahead, td 4555 ft. Pyramid O&G Co.'s Wheeler A-1, w½ ne 16-18n-16w, tested est 11 mil ft dry gas through ⅝ in choke, arr set 5-in csg, td 5911 ft, top Travis Peak.

CATAHOULA PARISH—McDermott et al's La. Cent. Lbr. Co. 1, 5-10n-5e, sd 2760 ft.

CLAIBORNE PARISH—E. T. Oakes et al's Patton Est. 2, ne ne 1-20n-5w, elev 357 ft, coring 4467 ft sand, shale and red beds. Sugar Creek Synd.'s Darrett 2, se sw 31-20n-5w, elev 234 ft, dr 8125 ft black shale.

DE SOTO PARISH—J. E. Carlson et al's Garland 1, se nw 7-14n-14w, top Nacatoch 1065 ft, sr 1280 ft. Payne et al's Harris 1, 11-13n-14w, fsg 2200 ft. R. Kamon's Rascoe Est. 1, se nw 14-13n-13w, lcn.

JACKSON PARISH — Zeigen et al's La. Cent. Lbr. Co. 5, ne nw 13-14n-2w, owdd, 1770 ft.

LA SALLE PARISH—H. L. Hunt's La. Cent. Lbr. Co. 2, sw sw 26-10n-4e, mim.

MOREHOUSE PARISH—Henry E. Rondeau, Camp et al's Clarke 1, ne se 10-20n-7e, elev 90 ft, woc 13⅜ in csg 650 ft.

NATCHITOCHES PARISH—C. D. Morrison et al's Moffet 1, se se 19-10n-10w, woc 220 ft. Union Pet. Co.'s De Blieux 2, 83-10n-7w, dr 1250 ft lime. I. J. Allen's Simpson 1, 12-10n-7w, dk.

RED RIVER PARISH—Conley et al's Long-Bell 1, ne ne 19-13n-9w, sd 3200 ft install heavier rig. T. G. Shaw's Teekel 1, se sw 34-13n-10w, pump 65 bbls fluid 35 percent sw daily, td 2830 ft.

RICHLAND PARISH—Gulf Oil Corp.'s R. R. Rhymes 15, nw se se 32-17n-6e, dr 3000 ft.

SABINE PARISH—Massa & Aiken's Whitney Corp. 1, ne ne 19-10n-13w, claim so in 23 ft of sand in Fredericksburg, set 7-in csg 3100 ft, td 3300 ft. A. H. Tarver's Baker 3, nw ne 36-8n-12w, elev 347 ft, 8¼ in csg 3560 ft, dr 4675 ft lime. Whitehurst et al's Whitney Corp. 1, 8-9n-13w, claim strong sg 4400 ft, dr 4410 ft lime. Pearl Oil Corp.'s Cranford 6, 20-9n-13w, arr set 4¼ in csg after sdtr 6-in, td 3500 ft.

TENSAS PARISH—H. M. Jones' Chicago Mill & Lbr. Co. 1, ne ne 29-12n-10e, sd 880 ft. Clara Nook Plant 1, se se 32-12n-10e, sd 650 ft.

WEBSTER PARISH—W. D. Ambrose et al's Crichton 1, sw nw 36-18n-8w, 16-in csg 250 ft, dr 2504 ft. J. P. Evans' T. H. Johnson 1, sw nw sw 36-18n-9w, elev 239 ft, dr 3965 ft. Ohio Oil Co.'s R. L. Holloway 6, ne sw 23-21n-10w, elev 210 ft, cemtd 7-in csg 8483 ft, arr dr plug, td 8495 ft, (Permian). Red Hawk Oil Co.'s Baker 1, se nw 9-22n-9w, sd 200 ft. Skidmore et al's Barnette 1, nw sw 29-17n-9w, sd 1050 ft.

WEST CARROLL PARISH—Lohman et al's C. M. Neely 1, se se sw 19-20n-11e, 12-in csg 185 ft, dr 700 ft shale.

MICHIGAN

ALLEGAN COUNTY—Russell Sapp's Hudson 1, sw ne sw, 2n-13w-29, lcn.

ALPENA COUNTY—C. W. Tteater's Nevins 1, 32n-6e-18, dr 3150 ft.

ALPENA COUNTY—C. W. Teater's Nevdale's Buffalo Land 1, 19n-3e-7, csd 8-in at 1076 ft, dr 1100 ft. T. F. Caldwell, Inc.'s Mutch 1, 19n-4e-17, dr 410 ft.

CLINTON COUNTY—J. T. Norris, Tr.'s Harris 1, 7n-2w-14, lcn. Petroleum Exploration Co.'s Cable 1, 5n-2w-12, fsg 2950 ft. H. E. Bell's Arthur 1, 6n-1w-29, spud.

GLADWIN COUNTY—Goll, Graves, Mechling's Oard 1, 18n-1w-25, Dundee 3496 ft, oil 3559-80 ft, td 3680 ft, sw, pb 3657 ft, acidized, flowed by heads 126 bbls oil 34 hrs, running rods; Crigano 1, 17n-2w-36, se se ne, rig; State 1, 19n-2e-30, sd 1300 ft.

GRATIOT COUNTY—Red Man Oil Co.'s Duckworth 1, 11n-3w-9, rig. Edward Swearer's Alexander 1, nw ne nw, 12n-2w-8, mim. McPherson and Co.'s State Bank 1, 9n-1w-11, rig. R. L. Stoddard's Soule 1, 11n-2w-9, dr 1200 ft. Oil Finders, Inc.'s Stahl 1, 11n-2w-28, dr 3076 ft. Herbert Snell's Smead 1, 11n-4w-20, dr 900 ft.

IONIA COUNTY—Terry Dale, Inc.'s Tew 1, 6n-7w-12, sd 3810 ft. James H. Barton's Mosser 1, 6n-5w-19, rig.

ISABELLA COUNTY—Taggart Brother's Waters 1, nw sw se 14n-3w-28, lcn. H. E. Bell's Nilson 1, se se ne, 13n-3w-16, dr 400 ft.

KENT COUNTY—J. H. Barton's Smith 1, 10n-10w-29, sd 3201 ft. Michigan Oil Exploration Co.'s Croff 1, 7n-9w-35, dr 4050 ft.

MACKINAC COUNTY—Charles Van Kuren's Sportsmen Club 1, 44n-9w-17, sp.

MASON COUNTY — Sylvania Oil Co.'s Campbell 1, 17n-15w-10, dr 2475 ft. Dragoon Dev. Co.'s Young 1, 17n-15w-15, dr 2870 ft. Northern Development's Burke 1, 17n-15w-26, sd 2630 ft. Great Northern Drilling Co.'s Cartier 1, 19n-15w-6, dr 1500 ft.

MECOSTA COUNTY—F. V. McCollister's Joass 1, 15n-10w-8, dr 3350 ft. W. J. Bernier's Fitzgerald 1, 13n-9w-9, Dundee 3474 ft, dr 3585 ft. Daily Crude Oil Co.'s Hoffman 1, 16n-7w, 9, dr 610 ft. Hall Be Oyle Co.'s Sears 1, 13n-8w-9, dr 1300 ft.

MONTCALM COUNTY—K. B. Montigle's Loree 1, 9n-5w-18, sd 2723 ft, testing so, to acidize Traverse lime.

MISCELLANEOUS COUNTIES — Chippewa F. D. Barton's Krettan 1, 41n-7e-17, sd 880 ft. Genessee C. E. Bliss' Crawford 1, 9n-8e-27, rig. Ingham: National Mineral's Smith 1, 4n-1w-9, dr 400 ft. Jackson: Morris Oil and Gas Corp.'s Hugo Volz 1, ne nw sw, 2s-2e-23, lcn. Macomb: H. H. Brown's Stepnitz 1, 2n-13e-Private Claim 546, dr 400 ft. Livingston: Louis Myer's Cassidy 1, 4n-3e-5, mim. Ogemaw: Meredith Oil Co.'s Diebolds 1, 21n-1e-17, dr 300 ft. Osceola: M. Bliss Keeler's Beall 1, 18n-9w-24, lcn. Otsego: Harley Williams' Hanson 1, 30n-1w-15, dr 700 ft.

MISSISSIPPI

CLAIBORNE COUNTY — Claiborne O&G Drlg. Co.'s Crawford 1, 6-13n-4e, elev 115 ft, dr 1120 ft. Claiborne County Dev. Co.'s Ruth Hayden 1, 56-11n-2e, lcn.

GRENADA COUNTY—H. T. Salter et al's Carpenter 1, 5-21n-7e, elev 345 ft, dk and mir.

JONES COUNTY—Snow-Black Pet. Co.'s Fox 2, 31-7n-12w, ran electrical tester, sd 4212 ft.

SIMPSON COUNTY—Goodwill O&G Co.'s Berry 1, 33-2n-4e, dk.

SMITH COUNTY—Howie & Lewis' Broadfoot 1, 15-4n-7e, sd 1890 ft, green limey shale.

YALOBOUSHA COUNTY—G. M. Langston et al's W. C. Bryant 7, ne sw 21-24n-6e, elev 276 ft, dk and mir.

MONTANA

DANIELS COUNTY—Whitetail Oil & Gas Co. nw ne nw 10-36n-50e, dr 2552 ft.

FERGUS COUNTY—Judith Operating Co. Government 2, w nw ne 35-22n-17e, dr 2094 ft.

JUDITH BASIN COUNTY — Fletcher P. Hunt Hobson 3, nw se ne 30-14n-15e, dr 969 ft.

PETROLEUM COUNTY — H. Clark Rowland Kalispell 1, ne ne se 35-14n-25e, ru.

PONDERA COUNTY — Gordon Campbell's Hughes 1, nw ne nw 12-30n-4w, dr 2220 ft. R. C. Tarrant Wallenstein 1, cnw nw sw 9-28n-5w, standing at 2505 ft about 13 ft in top of Madison lime with so. At 2942 ft 1,000,000 cu ft wet gas encountered.

TOOLE COUNTY — Boyd Kyle Wolsti 1, cse se 3-33n-1w, dr 1331 ft.

NEW MEXICO

LEA COUNTY—Argo Royalty Co.'s B. T. Lanehart 1, sw se ne 21-25s-37e, elev 3071 ft, rust. C. & G. Oil Co.-The Texas Co.'s Ellen Weir 1, c ne ne 14-20s-37e, elev 3564 ft, top anhydrite 1348 ft, td 4075 ft, flowing 21 bbls oil and 159 bbls water daily. Barney Cockburn & Rowan-Nichols Oil Co.'s H. G. Mattern 1, sw se 7-22s-37e, elev 3426 ft, used 2000 gals acid at 3727 ft, re-cem cas. Conoco & California Co.'s E. M. Elliott 1-A-21, c se se 21-22s-37e, elev 3338 ft, cem cas 117 ft. Culberson, Erwin & Stovall's J. S. Eaves 1, c sw nw 18-21s-33e, elev 3893 ft, dr 3000 ft. Emperor Oil Co.'s State 1, c sw sw 5-21s-35e, dr 300 ft. Gulf Oil Corp.'s L. M. Buffington 1, c nw sw 13-25s-37e, elev 3091 ft, sd for rotary in big gas, td 3063 ft; S. J. Carr 1, c nw sw 3-24s-37e, elev 3267 ft, dr 3760 ft; F. C. King 1, c sw nw 5-23s-37e, elev 3371 ft, dr 3700 ft. Humble O&R Co.'s B. E. Boyd 1, c nw se 35-22s-37e, elev 3292 ft, dr 2600 ft; W. B. Farrell 1, c sw se 22-22s-37e, elev 3341 ft, pb for sul w 3691-3705 ft to 3687 ft, pumping mostly water. Jal Nat'l Gas Co.'s C. T. Bates-Humble 1, c nw sw 20-25s-37e, elev 3049 ft, dr 2150 ft. Landreth Prod. Corp.'s E. H. Grizzell 1, c se sw 5-22s-37e, elev 3437 ft, flows by heads, co after shot, td 3780 ft. Harry W. Leonard et al's B. T. Lanehart 2, c se nw 21-25s-37e, elev 3067 ft, blew in at 2913 ft and gauged 285 bbls oil per hr for 3 hrs on casing choke, sd to cem 7-in pipe 2901 ft. Magnolia's Scharbauer-Eidson 1, c nw se 29-16s-35e, elev 4014 ft, dr 1835 ft; E. A. Carson 1, c nw sw 28-21s-37e, elev 3463 ft, pay 3700-3775 ft, used acid and shot, completed flowing 120 bbls daily. Ohio Oil Co.'s Anna Walden 1, c ne ne 21-22s-37e, elev 3364 ft, dr 250 ft. Oil Well Drlg. Co. et al's P. C. Klingsmith 1, c se se 20-19s-37e, elev 3655 ft, dr 1450 ft. Oil Well Drlg. Co.-The Texas Co.'s L. L. Clardy 1, c se se 13-16s-36e, dr 1530 ft. N. G. Penrose & Rowan-Nichols Oil Co.'s Will Cary-Humble 3, c se nw 22-22s-37e, elev 3364 ft, sd 1150 ft; Cary-Humble 4, c sw nw 22-22s-37e, elev 3365 ft, dr 3500 ft. Plains Prod. Co.'s J. A. E. Knight-Humble 1, c ne se 21-24s-37e, elev 3221 ft, dr salt 1360 ft; Knight-Humble 2, c ne sw 14-24s-37e, mim; John Williams-Humble 1, c sw ne 34-24s-37e, elev 3191 ft, dr salt 1370 ft. Repollo Oil Co.'s J. M. Brownlee 1, ne ne sw 25-21s-36e, elev 3557 ft, dr 800 ft; Frances Stuart 1, se nw se 10-25s-37e, elev 3114 ft, td 3310 ft, est 1,500,000 ft gas with little oil. Republic Production Co.'s R. S. Crosby 2, nw nw sw 28-25s-37e, lcn. Samedan Oil Corp.'s S. B. Hughes 1, c ne sw 4-23s-37e, elev 3321 ft, dr 600 ft; Marshall 1, c sw nw 12-21s-36e, elev 3540 ft, td 3861 ft, co bridge after 2nd nitro shot. Skelly Oil Co.'s J. V. Baker 2, c nw nw 27-22s-37e, elev 3341 ft, shot 220 qts nitro 3504-3596 ft, flowed 332 bbls via casing, testing; Ellen Sims 1, c nw se 3-22s-37e, elev 3300 ft, pay 3520-3538 ft, flowed 421 bbls oil natural in 13 hrs, testing; Sims 2, c sw se 3-23s-37e, mim; F. S. Stuart 1, c ne nw 15-25s-37e, elev 3107 ft, dr 3350 ft. Sun Oil Co.'s B. T. Lanehart 1, c se se 20-25s-37e, elev 3042 ft, top anhydrite 971 ft, top salt 1145 ft, pb fr 2790 ft to 2422 ft, show gas 2679 ft, dr 2725 ft. The Texas Co.'s E. D. Fanning 1, c se ne 4-24s-37e, elev 3293 ft, dr with 100 ft oih at 3691 ft.

OKLAHOMA

ATOKA COUNTY—Prairie Investment Co.'s Cobb 1, sw ne nw 19-3s-11e, dr 665 ft. Phelps & Coats et al's Fidelity Life Ins. Co. 1, se sw nw 23-1s-12e, set 8-in csg 690 ft, td 750 ft, sd.

BECKHAM COUNTY—Jo-Gail Drlg. Co.'s Gilliland 1, cne ne 3-8s-26w, dr 1088 ft.

CARTER COUNTY—Carter Oil Co. et al's Leon Voorhees 1, cse sw 34-5s-2w, dr 7634 ft. John W. Hammond et al's Lile 1, sw se se 8-5s-1e, td 553 ft.

COAL COUNTY—Shell Pet. Corp.'s Hill 3, se se nw 30-3n-10e, td 4270 ft, 75,000 ft gas. Sinclair Prairie's Culver 1, ne ne sw 16-1n-8e, dr 2992 ft. Mitchell's Quiett 1, ne nw sw 35-1n-8e, sd 1900 ft, moving out tools. Carter & Magnolia's James 1, sw nw sw 35-1s-8e, dr 2512 ft. Continental's King 1, ne sw ne 26-1n-8e, dr 1816 ft.

COMANCHE COUNTY — William Davis' Aetna Life 1, se ne ne 22-2n-15w, td 160 ft, sd.

GARFIELD COUNTY—Stanolind-Amerada's Brunken 1, sw sw ne 32-23n-4w, td 6429 ft, sd

GARVIN COUNTY—McElreath & Suggett's Lassater 1, se se sw 2-2n-1w, td 5010 ft, reaming. Luttrell et al's Howell 1, nw se nw 34-1n-1e, dr 155 ft. Chas. E. Carter et al's Wood 1, nw sw se 5-4n-3e, swb 80 bbls oil, 20 bbls water, 8 hours. B. F. Lundy's G. C. Prince 1, ne ne se 32-1n-2w, loc.

GRADY COUNTY—Art Holt et al's Ramsey 1, ne se ne 31-5n-8w, rig. Graham et al's Castleberry 1, sw se nw 8-5n-7w, sd 580 ft.

HUGHES COUNTY — Phillips Pet. Co.'s Eberle 1, ne ne sw 12-5n-9e, td 5687 ft, to recement. Sivils et al's Montgomery 1, nw sw nw 7-9n-9e, fsg bailer, td 3498 ft. Blackwell O&G Co.'s Long 1, se ne nw 29-9n-9e, fsg 10-in csg 2615 ft. Sinclair Prairie et al's Wilkey 1, sw sw sw 23-9n-8e, sd 3549 ft. T. P. McAdams & Barnes, Inc.'s Koch 1, sw ne ne 1-9n-10e, dr 2715 ft. Burke-Greis' Dunson 1-A, se nw nw 3-9n-8e, loc.

JACKSON COUNTY—Burnham's Oliver 1, nw nw se 26-1n-20w, dr 2140 ft. Ben Russell's Daniel 1, nw ne se 13-3n-20w, td 1482 ft, sd. Jackman's Fee 1, sw sw sw 27-1s-24w, dr by 2130 ft. Delaney's Mock 1, cne sw 32-1n-20w, dr 2075 ft.

JEFFERSON COUNTY — Red River Oil Co.'s Trout 1, se ne ne 6-8s-7w, td 2212 ft, run 5-3/16-in csg 2145 ft, testing.

JOHNSTON COUNTY—Shell Pet. Corp.'s Illinois Bankers Life 1, nw se ne 10-2s-7e, dr 1519 ft. Patton et al's McCrummens 1, sw sw ne 16-1s-6e, td 116 ft sd.

KAY COUNTY—Allen & Texas Co.'s Fulton 1, se se se 18-27n-4e, sd 1675 ft. Denver P&R Co.'s School 1, se nw ne 13-26n-1w, td 128 ft, woc. Robert Wilson et al's Dickerson 1, ne ne sw 20-29n-1w, loc.

KIOWA COUNTY—Beeler & Klein's Parrish 1, se se nw 3-6n-15w, sd 290 ft. Westbrook & Likeing's Aetna Life 1, ne se se 10-5n-16w, dr 380 ft. Travis & Scott's Doyle 1, ne se sw 21-5n-17w, td 3852 ft, fsg.

LeFLORE COUNTY—McGraw et al's Tidwell 1, cnw se 17-3n-22e, pulling 10-in csg, td 1890 ft.

LINCOLN COUNTY—Amerada et al's Zimmerman 1, sw sw ne 10-12n-5e, testing. Mid-Continent's Hillman 1, sw se ne 29-13n-6e, rust 4447 ft. Skelly's Sporn 1, nw ne sw 21-17n-3e, dr 2998 ft. Kemp & Continental's Lobaus 1, nw sw nw 21-17n-5e, rig.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, sd 8565 ft. Riddle et al's Johnson 1, csw se 20-8s-2w, dr 930 ft. Amerada & Stanolind's Westheimer 1, sw se sw 27-6s-2e, woc after testing.

MARSHALL COUNTY — Helmerich & Payne's Taliaferro 1, nw se sw 26-5s-5e, dr 3015 ft in new hole. Sherril & Round's Taylor 1, sw ne ne 30-7s-7e, ur 6⅝-in csg 765 ft.

McINTOSH COUNTY—Dieckman's McIntosh 1, se se se 4-12n-17e, sd 1000 ft. Wigton et al's Koch 2, nw se ne 15-11n-15e, td 3275 ft, D&A.

NOBLE COUNTY — Stanolind-Amerada's Gillham 1, ne se se 14-22n-1e, dr 4527 ft.

OKFUSKEE COUNTY — Oklahoma Oil Corp.'s King 1, se se ne 23-10n-8e, mir.

OKLAHOMA COUNTY — O'Shaughnesey, Inc.'s Berlowitz 1, se sw ne 9-12n-3w, td 6636 ft, woc.

OSAGE COUNTY—Gray & Tolson's 1, sw sw ne 33-25n-7e, sd 3052 ft wih. Stoner & Miller's 1, nw se sw 18-22n-8e, td 2468 ft, sd. Norbla Oil Co.'s 1, ne ne ne 13-22n-6e, rig.

PAYNE COUNTY — Amerada-Stanolind's Pratt 1, se se se 29-19n-5e, td 3802 ft, testing.

PITTSBURG COUNTY — Oklahoma Dist. Oil Co.'s Beeler 1, ne ne sw 7-7n-14e, dr 1361 ft.

SEMINOLE COUNTY — Tom Phillips & Kimraw Drlg. Co.'s Chemperney 1, se se nw 7-6n-7e, pb 2239 ft, woc. Twin State's Hamm 1, sw se sw 24-10n-7e, td 4368 ft, D&A. Crosbie's Casey 1, cn½ n½ ne 30-6n-8e, td 4175 ft, D&A. Arkansas Royalty Co.'s Kiker 1, se se ne 9-10n-7e, dr 4503 ft. Deaner & Tilley et al's Wilson 1, se sw sw 29-7n-6e, dr 4062 ft. Rudco O&G Co.'s Butner 1-A, ne ne sw 15-9n-8e, set 8-in csg 1347 ft, td 1348 ft. Kennedy's Bowlegs 1, nw nw se 3-8n-7e, loc. Kingwood Oil & Gillispie's Maracle 1, nw sw ne 13-9n-7e, dr 1660 ft.

SEQUOYA COUNTY—Pure Oil Co.'s Rentie 1, sw nw ne 12-11n-26e, swb 90 bbls oil 24 hours, compl.

STEPHENS COUNTY — Endicott et al's McFatridge 1, nw nw sw 11-3s-19w, fsg 1487 ft. Ed Parson's Olson 1, csw sw 21-2n-8w, rig. The Texas Co.'s Bohanan 1, ne nw nw 15-3s-5w, mach. T. H. McCasland's Hildebrand 1, sw se ne 1-3s-7w, mitd.

TEXAS COUNTY — Allison & Barnhill's Bingley 1, sw sw ne 30-2n-18e cm, rig.

TILLMAN COUNTY — Gulf Oil Corp.'s Wearmouth 1, se nw se 31-1s-18w, fsg 5125 ft. Johnson, Young & Mitchell's Donahoe 1, se nw nw 7-4s-17w, dr 2998 ft. Gulf Oil Corp. et al's McWilliams 1, nw sw sw 15-3s-17w, dr 5006 ft. Bernheim's Tate 1, ne ne nw 16-1s-19w, td 2602 ft, sd. Smith's Hammill 1-A, ne nw nw 6-5s-15w, sd 2140 ft. Eugene Skinner's Lynn Oliver 1, se se nw 22-1s-15w, td 610 ft, sd wih.

EAST TEXAS

ANDERSON COUNTY—Gulf Oil Corp.'s M. J. Ross 1 (54.7-ac), Robt. Erwin sur, Camp Hill area, elev 487 ft, top Georgetown lime 5452 ft, dr shale and lime 7105 ft. Tide Water-Seaboard Oil Corp.'s J. N. Edens 15 (988.6-ac), Samuel Snider sur, Cayuga area, elev 313 ft, Pecan chalk 2245-2410 ft, Austin chalk 3161-3498 ft, top Woodbine series 3880 ft, top Georgetown lime 4619 ft, top Glen Rose between 6040 and 6050 ft, dr 6300 ft.

BOWIE COUNTY — Fay T. Chew and Brassett's Byron Barkinson 1 (90-ac), J. W. Parkman sur, 2½ mi n of Leary, sp and sd. Ferguson and Hill's A. Y. Breckenridge 1, Nancy Dycas sur, 4 mi w Texarkana, sp and sd. Woodley and Bentley's J. D. Lumpkin 1 (245-ac), John McDermott sur, 1¼ mi sw Dalby Springs, elev 290 ft, Annona chalk 1665-2090 ft, dr 3375 ft.

COLLIN COUNTY—Port Bolivar Co.'s O. G. Durning-Clarkston 1-A (140-ac), Wm. Creager sur, Pat. 1193, elev 722 ft, sd 4096 ft; A. Shirley 1 (50-ac), Gwynn Morrison sur, 1 mi e of Anna, dk.

DELTA COUNTY—Delta Oil Co., Inc.'s J. H. McKinney 1 (231-ac), L. Hampton sur, lcn.

FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Herold League, 5 mi sw Kosse, elev 521 ft, top Pecan chalk 2114 ft, Austin chalk 2765-2946 ft, reaming, td 3502 ft.

FRANKLIN COUNTY—Atex Oil Co.'s R. L. Jaggers 1, J. Humphreys sur, 1½ mi nw Winfield, elev 398 ft, dr 500 ft. Earl Bateman Drlg. Co.-Al Ravenger's E. L. Phillips 1 (38½-ac), Wm. Bridwell sur, elev 358 ft, top Georgetown lime 3510 ft, top Paluxy 4287 ft, tested sw at 4357-4361 ft, pb to 4343 ft, sd to pump. Joe DeGrazier et al's F. M. Batts 1 (30-ac), F. M. Batts sur, elev 356 ft, Pecan chalk 1355-1420 ft, top Georgetown 3504 ft, top Paluxy series 4274 ft, dry and abd 4343 ft. Virginia Hudson et al's B. M. Patterson 1, E. Rice sur, 3 mi sw Hagansport, elev 411 ft, dk. Humble's A. P. King-Hughes 3 (1053.36-ac), O. James sur, elev 369 ft, dr 3800 ft; King-Hughes 4, elev 368 ft, rig; King-Hughes 5, elev 365 ft, dr 1000 ft; P. J. Dawson 1 (80.45-ac), B. H. Epperson sur, elev 372 ft, top Paluxy 4220 ft, td 4330 ft, sd to pump with hole full oil. Lucey Pet. Co. et al's W. N. Crawford 4 (25.23-ac), O. James sur, elev 371 ft, top Georgetown lime 3466 ft, dr 4100 ft. Magnolia-Humble's C. L. Owings 1 (160-ac), McKinney Williams sur, elev 367 ft, Pecan chalk 1630-1809 ft, top Georgetown lime 3408 ft, top Paluxy oil pay 4148 ft, td 4168 ft, cem 7-in cas 4126 ft. McAlester Fuel Co.'s A. M. Crawford 4 (25.23-ac), O. James sur, elev 366 ft, Pecan chalk 1598-1688 ft, top Red Beds 3090 ft, top Georgetown 3390 ft, dr 4000 ft; Crawford 6, elev 366 ft, top Georgetown lime 3345 ft, Paluxy pay series 4160-4306 ft, completed flowing 40 bbls per hr via tubing; Crawford 7, lcn; Crawford 8, rig. Stroube & Stroube's B. Norman 1, MEP&P sur No. 344, lcn. Red Iron Drlg. Co.-Dean Bros. & Adkisson's Lavada Church 1 (1-ac), C. Payne sur, elev 372 ft, Pecan chalk 1590-1810 ft, top Paluxy 4125 ft, dr 4215 ft. RH&B Oil Co.'s E. L. Phillips 1 (72.1-ac), Wm. Bridwell sur, rig.

GRAYSON COUNTY — Olson Drlg. Co.-James H. Gardner et al's SW Life 1 (160-ac), J. C. Jamison sur, A-865, 3 mi n Pottsboro, elev 767 ft, top Sylvan shale 4870 ft, Viola lime 4901-5096 ft, td 5890 ft, pb to 4400 ft to sidetrack junk. Port Bolivar Co.'s Creed Taylor 1 (160-ac), J. Fitzhugh sur, 3 mi se Gunter, sd 4048 ft.

HENDERSON COUNTY — Atex Oil Co.-Taubert & McKee's R. W. Fair et al 1 (204-ac), J. M. Arnest sur, 5 mi sw Chandler, elev 374 ft, dr 2750 ft.

HOPKINS COUNTY—D. S. Hager, W. P. Luse & Leon Russ' J. E. Worsham 1 (150-ac), A. O. Wetmore sur, 2½ mi s Sulphur Bluff, elev 440 ft, Pecan chalk 1187-1208 ft, top Woodbine 3040 ft, top Georgetown lime 3600 ft, Paluxy series 4465-4500 ft, flows 40 bbls daily by heads, pop; Worsham 2 (600 ft sw producer), cem sur cas. A. T. and J. C. Johnson's J. F. Irvin 1 (4-ac), D. Fuller sur, lcn. R. T. Sullins et al's H. W. Wilson 1 (8½-ac), A. O. Wetmore sur, lcn.

HOUSTON COUNTY—Branch et al's P. S. Griffiths 1, Frank Johnson sur, 3 mi sw Crockett, dk. Ellison, McBride, Haberle & Thornton's J. E. Bean 1 (40-ac), Eli Steadman sur, 1½ mi nw Grapeland, elev 482 ft, Pecan chalk 4660-4894 ft, Austin chalk 5610-5961 ft, top Woodbine series 6027 ft, td 6037 ft, making gas and distillate via choke. Walter L. Goldston et al's B. W. Burns-Humble 1 (50-ac), Juan de la Reviere sur, elev 255 ft, Pecan chalk 4280-4450 ft, top Austin chalk 5260 ft, dr chalk 5575 ft.

HUNT COUNTY—Penn Oil Corp.-Elmer S. & Fox Wood's A. B. Manning 1 (57½-ac), Sally Owens sur, dk. Texola Land Corp.'s Gen'l American Life Ins. Co. 1 (203.8-ac), blk 104, J. Yeary sur, lcn.

KAUFMAN COUNTY—Colton, R. P. Lester et al's Barrow Bros. 1 (40-ac), J. D. Taylor sur, 8 mi ne Elmo, elev 528 ft, Austin chalk 2235-2681 ft, top Georgetown lime 4194 ft, top Paluxy series 4775 ft, probably carried water, dr hard lime 4975 ft.

LAMAR COUNTY—J. S. Abercrombie Co.-Harrison Oil Co.'s C. M. Terrell 1 (220-ac), Abner Hill sur, 4½ mi se Paris, cem sur cas. J. A. Forester et al's J. S. Woodward 1 (18¾-ac), J. W. Woodward sur, 1½ mi e by s of Minter, elev 402 ft, top Georgetown lime 2256 ft, Paluxy sand 3060-3144 ft, top anhydrite 3735 ft, base hard anhydrite 4075 ft, broken to 4105 ft, sd 4516 ft, to dd to 5200 ft.

LIMESTONE COUNTY—C. F. Lytle et al's J. L. Thompson 1-T (141-ac), w side Mexia field, elev 459 ft, cem 7-in cas 6002 ft, td 6065 ft, tested salt water flow with gas, pb to 6059 ft, sdo.

RED RIVER COUNTY—J. S. Abercrombie Co.-Harrison Oil Co.'s Southern Pine Lumber Co. 1-A (392.57-ac), D. D. Bruton sur, 12 mi ne Clarksville, elev 407 ft, Georgetown lime 665-1020 ft, top Paluxy 1057 ft, anhydrite 1740-1800 ft, top sand with good oil saturation 2104 ft, tested sw at 2110 and 2118 ft, jkd and abd 2292 ft. R. H. Manning and Texfornia Co.'s Hocker-Hughes 1 (80-ac), MEP&P Ry. sur No. 642, 6 mi sw Lydia, elev 307 ft, Nacatoch sand 424-460 ft, sd 850 ft. B. B. Orr et al's C. Hocker-Kurth Lumber Co. 1 (635-ac), Elizabeth Smith sur, 11 mi ne Clarksville, dr 2030 ft.

ROBERTSON COUNTY—J. Edward Mills et al's Tony Congelosi 1 (75-ac), Geo. A. Nixon sur, 3½ mi sw Hearne, cem sur cas.

RUSK COUNTY—Pure Oil Co.'s W. H. Faulkner 1 (60-ac), Wm. Elliott sur, 5 mi e Mount Enterprise, elev 563 ft, Pecan chalk 2650-2890 ft, Austin chalk 3286-3450 ft, top Georgetown lime 3446 ft, stringer anhydrite 3320-25 ft, top massive anhydrite 5945 ft, tested sw at 6177-6298 ft, top Travis Peak red beds 7323 ft, dr 7690 ft.

SMITH COUNTY — Carolyn & Hastings' Bennett 1 (80-ac), Robt. Walters sur, 3 mi ne Winona, rig.

TITUS COUNTY—B. G. Byars et al's L. Blackburn 1 (16.66-ac), J. W. McCullough sur, elev 327 ft, Pecan chalk 1440-1773 ft, dr 3450 ft. Centennial Prod. Co. (was A. M. Peairs et al's) T. Savage 1 (4-ac), J. Salmon sur, elev 354 ft, Pecan chalk 1510-1735 ft, dr 4100 ft. E. E. Combs et al's Dr. R. A. Tate 1, c lot 2, blk 30, Talco, elev 373 ft, Pecan chalk 1560-1830 ft, dr 3900 ft. Eugene Constantin et al's (Delta Drlg. Co.), Cato 1, c blk 44, Talco, top Georgetown lime 3372 ft, top Paluxy 4176 ft, td 4291 ft, failed to flow, dd and will pump. Erle P. Halliburton, Inc.'s H. M. Hood 1, c lot 2, blk 19, Talco, elev 366 ft, Pecan chalk 1610-1760 ft, dr 3600 ft; Kelley 1, c lot 3, blk 22, elev 378 ft, Pecan chalk 1630-1778 ft, dr 3300 ft. L. L. Deaton et al's W. H. Gray 1, c lot 7, blk 17, Talco, dr 3200 ft. Jack Hearrell et al's L. J. Truitt 1, c lot 1, blk 40, Talco, Pecan chalk 1550-1825 ft, dr 3600 ft. Humble's N. B. Davis 1 (102.1-ac), I. P. Stern sur, dk; Mrs. L. Stevenson 1 (88.1-ac), I. P. Stern sur, elev 341 ft, Pecan chalk 1600-1760 ft, top Paluxy 4173 ft, td 4344 ft, swabbed 65 to 95 percent salt water, pb to re-test; W. B. Hinton et al's C. M. Carr 2-A (16.11-ac), discovery lease, elev 361 ft, Pecan chalk 1620-1828 ft, top Paluxy 4170 ft, dr 4307 ft. Jones-Shelburne, Inc. et al's L. Stevenson 7 (71.9-ac) O. James sur, dk; Tom Simms 1 (2½-ac), J. Salmon sur, Pecan chalk 1486-1551 ft, dr 3500 ft. K. & A. Oil Co.'s Talco Townsite 1, c lot 17, blk 16, rig. R. E. Massengill, Dean Bros. & Adkisson's I. Tidwell 1 (¾-ac), c lot 15, blk 16, Talco, top Pecan chalk 1600 ft, dr 3900 ft. W. P. Luse and Fosdick's Nugent 2 (2.3-ac), blk 18, Talco, top Paluxy 4149-4337 ft, testing; W. T. Sullivan 2 (4-ac), Delgado sur, coring 4120 ft.. Nugent 1, blk 18, mim. Magnolia-Humble's L. Blackburn 1 (80.51-ac), Ben Jones sur, elev 359 ft, Paluxy pay 4178-4340 ft, completed flowing 82 bbls per hr; C. W. Belcher 1 (80-ac), Ben Jones sur, rig; W. H. Crawford 1 (80-ac), I. P. Stern survey, mim. Nemo Oil Co.'s Talco School 2 (5-ac), I. P. Stern survey, elev. 376 ft, top Georgetown lime 3492 ft, top Paluxy 4175 ft, dr 4253 ft.

Nivla Oil Corp.-Sutton-Hawkins' W. H. Gray 2 (2-ac), blk 10, Talco, elev 360 ft, top of Pecan chalk 1658-1825 ft, top Georgetown lime 3527 ft, dr 4000 ft; J. N. Kelly 1, nec 15.76-ac lse., J. Salmon sur A-506, elev 348 ft, Pecan chalk 1533-1730 ft, top Red Beds 3181 ft, top Georgetown lime 3640 ft, top Paluxy series 4228 ft, sdo 4360 ft; Kelly 2, rig. J. W. Osteen et al's W. DuBose 1 (1-ac), M. V. Delgado sur, elev 376 ft, top Georgetown lime 3646 ft, Paluxy series 4158-4340 ft, testing. Paluxy Oil Corp.'s U. Shaw 1 (2.85-ac), Talco, top Georgetown lime 3551 ft, dr 4210 ft. Porter Bros. et al's W. T. Sullivan 1 (4-ac), I. P. Stern sur, elev 348 ft, top Paluxy series 4188-4352 ft, tested dry, cem 7-in cas. J. I. Roberts Drlg. Co.'s T. A. Simms 1, c lot 3, blk 19, Talco, elev 368 ft, dr 3500 ft. H. B. Ownby Drlg. Co.'s J. F. Barton 1 (4.8-ac), Delgado sur, elev 368 ft, top Georgetown lime 3504 ft, Paluxy pay 4155-4294 ft, completed flowing 18½ bbls per hour; Guy Franks 1, c lot 14, blk 16, rig. Yandell Rogers et al's T. L. Leake 1, c lot 1, blk 39, rig.

HARRISON COUNTY—W. F. Bridwell et al's Platt 1, F. C. Baker sur, arr deepen 2413 ft. Hanover, Bergendoll et al's Buchanan 1, Wm. McIlvain sur, sdtr 4070 ft.

PANOLA COUNTY — Gulf Oil Corp.'s Pierce & Chesbro 1, J. H. Shahan sur, spd. A. C. Glassell et al's Frost Lbr. Co. 1, Mary L. Potts sur, rur. Logansport P. L. Co.'s Rushing 1, Manning Smith sur, sd 2650 ft.

SHELBY COUNTY—J. R. Hinton et al's C. H. Horton 1, J. Dowlin sur, arr deepen 1860 ft. Rubeling & Potter's O. H. Polley 1, Wm. Whisner sur, dr 3702 ft shale. Mulroy & Curtin's C. Hayden 1, D. F. T. Yordt sur, woc surf cas 200 ft. Stebbinger et al's Pickering Lbr. Co. 1, C. F. Henry sur, top massive anhydrite 4630 ft, coring 4903 ft lime.

SOUTH TEXAS

ARANSAS COUNTY—Buchingham Oil Co.'s McCampbell 1, James Orick sur, 2 mi nw of Aransas Pass, td 7501 ft, pb 6534 ft, blew out while making dst, sdtr, cored sand 6534-46 ft, show oil, sw 6546-60 ft, sdtr, td 6560 ft, set 7-in csg on bottom, perf csg 6549-47 with 14 holes; 6551-54 10 holes, comp est 10 bph 7/64-in ch, tp 2250 lbs, cp 2575 lbs, oil 40½ grav.

ATASCOSA COUNTY—R. C. Lee, Trustee's U. A. Doumch 1, 152-ac tr, blk 10, J. T. Russell sur No. 1222, 3 mi n Poteet, set 7-in csg 3460 ft, top chalk 3503 ft, dr 3932 ft. Helvetia Oil Co.'s Susie Pratt 1, 176-ac tr, J. de la Garza sur No. 46, 1 mi nw Anchorage, sand & sandy shale 2249-2300 ft, set 7-in csg 2245, swabbed abt 5 bpd 44 grav oil, dr ahead 2600 ft.

BASTROP COUNTY — Marts & Beavens' Parkford & Jenkins 1, center lot 24, Bastrop Town tr, td 3410 ft, ds stuck, fresh water broke in, recemented hole at btm, still trying sdtr.

BEE COUNTY—Geo. M. Church et al's C. A. Ray 1, Anna Burk sur, 2 mi e Beeville, sd 4500 ft. Marine Oil Corp.'s J. C. Woods 1, 427-ac tr, J. Ryan sur, disc well, Beeville field, sd 5831 ft, dropped until work resumes. Nichols & Quinn's J. R. Scott 1, blk 7, Howeth & Swiger sub, Uranga gr, sp and sd, wor. H. A. Pressey's R. T. Hicks 1, 1120-ac tr, Jose M. Uranga gr, ab 568, 4½ mi s of Normana, td 3568 ft, broken sand, shale & shells 3482-3568 ft, show dry gas, set and cemented csg on btm, perf 3482-87, showed for gasser on prod test through csg, ¾-in ch, wp 50 lbs. R. B. Swiger's C. A. Voss 1-A, 330 ft nl & el of sh 1, Voss Ranch subd, Samuel May sur, dr 3407 ft, top Jackson 2891 ft, top Hockley 3270 ft; C. A. Voss 2-A, 660 ft s No. 1-A, 660 ft e of Devonian disc, Samuel May sur, lcn.

BEXAR COUNTY—Algra Oil Co. No. 1 Edward G. Peters, sur 5, sec 4, Miguel Gotari sur, 13 mi se San Antonio, dr 100 ft, midway. American Gas Co.'s Oliver No. 5, 400-ac tr, M. F. Rodriguez sur, Gas Ridge, td 3160 ft, csg stuck in hole, sd. Carter & Ingersoll's Louis Mann 1, 60-ac tr, John Christopher sur, 3 mi s Von Ormy, td 1202 ft, set 6⅝-in csg 60 815 ft, hole caved, underreamed last 300 ft, and landed 6⅝-in csg on btm. Joe Deupree's Mrs. R. S. Nina 1-A, Rodriguez sur, 7 mi s San Antonio, d & a 1300 ft; R. S. Coffey 2, F. Rodriguez sur, 1000 ft. B. Schumacher's Hilda Gillette 1, 49-ac tr, M. C. de Alamiz sur No. 20, 7 mi s San Antonio, td 1540 ft, lost 45 joints of dr pipe, junked & abnd. F. M. Shaver's A. W. Bitter 2, Jose Baerrera sur No. 58, 2 mi nw Von Ormy, top chalk 1171 ft, td 1324 ft, pb to 521 ft, on pump. Dr. L. Skaggs' P. A. Chapman, Jr., 1, 125-ac tr, A. J. Leslie sur No. 99, 10 mi sw San Antonio, td 1017 ft, set csg 6⅝-in at 997 ft, have not dr plugs. Fred Thorman's A. L. Salm 1, 330-ac tr, Peter N. Hays sur No. 3, coring 1772 ft. R. P. Whitfield's Col. John Sweeny 1, GH&SA RR sur, 11 mi sw San Antonio, td 804 ft, sand & sandy shale 784-804, 6⅝-in csg at 800 ft, trying raise csg to 784 ft to test. Woodward & Hardie's R. W. Devilbiss 1, John W. Devilbiss sur, 1 mi s Thelma, sd 2280 ft, set csg abt 2800 ft, dk pulled in, re-erecting dk & ru, cas has not been set.

BROOKS COUNTY—The California Co.'s E. Garcia 1, tr no 3, Las Mestinas de Gonzaline gr, Alta Mesa dist, sd 8022 ft, stuck ds.

BURLESON COUNTY — M. R. Exploration Co.'s J. M. Fountain 1, 963-ac tr in W. Raleigh sur, lcn. Red Bank Oil Co.'s Nellie Grann 1, 221-ac tr, Eliza Santef sur, set 163 ft of 15-in csg, dr ahead 400 ft.

CALDWELL COUNTY—Barnet Pet. Corp.'s M. L. Strawn 1, 210-ac tr, Pablo Martinez sur, ¾ mi w of Lytton Springs townsite, dr 1437 ft in sh. H. B. Starkey's (J. J. Elam et al) Francis-Brown-Cochran 1, W. F. Young sur, 5 mi e Luling, sand with show of oil & gas 1742-47 ft, set 5 3/16-in csg on packer, completing when bailer blown out of hole, now pulling csg to dd. Lincoln Pet. Corp.'s T. H. Brown 1, 70-ac tr, Dillard Cooper sur, td 2215 ft, pumped 20 bbls day, 5 3/16-in cas 1871 ft. Wheelock & Collins' Alexander 1, se½ of 158-ac tr, Wm. S. Pillers sur, ¾ mi w of Branyon field, td 1970 ft in chalk, set 7-in csg 1840 ft, woc.

CALHOUN COUNTY—Hiawatha Oil Co.'s (Benedum & Trees) John Roemer 1, J. J. Ogsberry sur, 9 mi s Port Lavaca, mim. Blanco Oil Co. & Al Buchanan's P. H. Welder 1, D. L. Palmer sur, 1 mi ne Heyser disc well, dk & sd acct weather. Continental Oil Co.'s Austin (Vandenberg) 1, sec 12, blk "H," Pedro Garcia sur, 1 mi n of other heaving shale wells, Seadrift prospect, sec 11 ¾-in cas at 6598 ft, td 8722 ft, in shale, ds stuck at 8521 ft, gas sand 8665-69 ft; sand 8700-20 show gas with slight oil odor, setting csg to btm, will test sands 8714-22 ft. Humble O&R Co. and Plymouth Co.'s E. H. Welder 2, ¾ mi sw Heyser disc well, Jose Maria Rios sur, dst 5454-75, rec 35 lbs pres, 90 ft mud, comp 100 lbs day ¼-in ch, too high oil-gas ratio, pulled tubg & reworked, dr ahead 5611 ft in sh; P. H. Welder B-1, 3000 ft nw disc, Agaton Cisneros sur, bldg dk.

DEWITT COUNTY—L. W. Capps et al's H. Buchhorn 1, 211.1-ac tr, S. V. Slade sur, at the town of Lindenau, 5 mi w Cuero, d & a 4000 ft. Universal & Gillespie's Schubel 1, C. Fitzgerald sur, abt 2 mi nw Yoakum, td 1567 ft, set 6⅝-in csg at 1650 ft, cap 1550-57½ ft, mud 1557½-67 ft, baled down cement broke, d & a 1567 ft.

DUVAL COUNTY—Conservative Oil Co.'s DCRC 2, sur 51, blk 12, 2 mi se Coleman field, td 1553 ft, set csg 1545 ft, woc. Cox & Hamon's J. B. Peal, sur 796, 1 mi ne Lopez, cored sand 2140-45 ft, set 7-in csg 2140 ft, comp 25 bph through flow valves. Gifford Oil Co.'s A. S. Roach 1, sur 200, 7 mi sw Driscoll field, sand 2499-2505 ft, slight oil show, td 4354 ft, d & a, ran electric formation test. Tom Graham's S. Sutherland 1, 170-ac tr, sur 188, 14 mi s of Freer, td 2347 ft, sand 2342-47 ft, 5 min, dst rec 375 pounds gas, 5 ft mud cut with high gravity oil, cutting another core. Frank J. Gravis' Schallert 1-A, sec 555, Palagana salt dome, reaming 2100 ft, oil show in sand 1310-55 ft. Chas. T. Kleiner's T. E. Chernoskey, n 30-ac of se 60-ac sur 226, ¾ mi nw Westheimer & Daube No. 2, sand 2693-2708 ft, set 7-in csg 2707 ft, perf csg in Loma Novia sand with 20 shots, perf with 50 more shots, no shows, sd, woc. Pan American Prod. Co.'s J. F. Welder Heirs 1-H, 160-ac lse in sur 103, 1 mi sw of Loma Vista, showed gas on dst of upper Loma Novia sand, dr to 3006 ft, pb to 2866 ft, set 7-in csg 2822 ft. Parr Oil Co.'s W. H. Sling 1, 330 ft sl & wl of s½ of nw¼ sur 118, 3 lcn n of Seven Sisters prod, sand 2477-85, 7-in csg 2469 ft, woc. Rogers & Rogers' C. and C. A. Cuellar 2, 100-ac tr, sur 117, coring for Gov't Wells 2601 ft; Rita S. de Pena 1, R. S. Pena plat, El Mesquite Trinidad Vela gr, se Cole field, td 2865 ft, sand 2850-62 ft, set csg 2845 ft, comp 10 bpd open flow. Smith & Hamill's Juan Benavides 1, Juan Benavides lands, E. Mesquite gr, dr 3470 ft; Juan Benavides 2, on common cor of blks 15, 16, 22 & 23, subd 3, El Mesquite gr, 3 mi e of Cole field, lcn. Shell Petr. Corp.'s J. F. Welder Heirs 1-B, 79.3-ac lse in sur 69, 1¼ mi n Loma Vista field, 3 attempts to dst in sandy shale 2863-74 ft failed, coring ahead 3165 ft. J. T. Stover's W. J. Hester 1, 330 ft sl, 990 ft wl of ne¼ of sur 47, ¼ mi w of Gov't Wells prod, sand 2251-60 ft, set 7-in csg, td 2267 ft, fsh for bailer.

EDWARDS COUNTY—M. R. Phillips' Turney 1, 320 ft wl, 4960 ft sl of sec 164, Wyatt sur, dr 80 ft, lime. Plateau O&G Co.'s Mrs. R. L. Hatch 1, 660 ft sl, 1980 ft wl of J. W. Jay sur, sec 66, HE&WT RR sur, blk D, lcn.

FRIO COUNTY—Amerada Pet. Corp.'s Arthur Michael 2, A. Lynch sur No. 321, Pearsall, td 5650 ft, set 7-in cas 5280 ft, swabbing; C. A. Miller 1, 394.3-ac tr in B. Satella sur, No. 323, Pearsall, set 7-in cas 5431 ft, top Austin ch 5421, td 5435, woc. Termo Co. of Texas' D. D. Arp 1, 102-ac tr, S. Blain sur, 4000 ft w Pearsall field, sd 5920 ft, top Austin chalk 5502 ft, show some oil, shot hole heaved, co to btm.

GILLESPIE COUNTY — A. Kothman's A. Marshall 1, 143-ac tr, sur 256, 6 mi se Loyal Valley, sd 250 ft, dropped until work begins.

GOLIAD COUNTY—Claude Morgan et al's Mrs. W. O. Maetze 1, G. Barerra sur, coring 5442 ft, hard sand. Pettus O&R Co.'s P. H. Hickle 1, 231-ac tr, J. Gomez sur, ½ mi ne N. Pettus field, d & a 3695 ft. Sun Oil Co.'s Lena Fromme 1, L. A. Maetze sur, 10 mi n of Goliad, lcn dropped until work begins. Zeni Oil Co.'s M. Lutenbacher 3, sw¼ of blk 25, Goliad Town sur, 2 mi s Goliad dst 4150-50 ft, slight gas flow, top Pettus 5365, took core recovered bottom 6 inches showed sandy shale, attempted to blowout ,set 7-in csg 5352 ft, cemented with 560 sacks, dr plugs, blew out again, killed, coring ahead 5433 ft.

GONZALES COUNTY—Tull et al's Boska 1, 61.2-ac tr, B. McClure sur, dr 2140 ft, sandy sh.

GUADALUPE COUNTY — Ira L. Armstrong's F. H. Fieke 1, 304-ac tr, B. & G. Fulcher sur No. 19, near Staples, sd 630 ft, sh. Clark & Weinert's W. O. K. Anderson 1-A, Green DeWitt sur No. 11, 6 mi s Kingsbury, 50 ft fr No. 1 Anderson, coring 2508 ft. Eickenrogt & Gallagher's O. H. Jahns 1, 840-ac tr, Green DeWitt sur, 3 mi sw South Darst Creek, corrected depth td 3204, td in Georgetown, set 6⅝-in csg at 2700 ft, top chalk 2920, top Eagleford 3081, top Buda 3122, top Del Rio 3184, top Georgetown 3200 (?), drilled out the cement plug, bailing. Long & Ross' Ed. Felix 1, 1½ mi s fr New Berlin, 75-ac, V. Duran sur, ru. Riddle Oil Co.'s E. Nolte et al J., Sowell sur, 6 mi e Seguin, dr 400 ft.

HIDALGO COUNTY—J. T. Barlow et al's Chapa 1, tr 252, por 39, n side Samfordyce field, td 3200 ft, pb to 2450 ft, sdtr at 2475 ft, dr 2933 ft in sdtr hole. Gulf States Oil Co.'s John Engleman 3, 200 ft el, 300 ft sl of lot 3, blk 70, Las Mestinas gr, reinstated, td 6812 ft, killed, recemented ran sw and distillate from sand 6688-96 ft, pb, gun perf 6686-91, flowing distillate & wash water to 800 lbs cp 1506 lbs. Maxwell-Mundy-Morris' Southland Dev. Co. (Hidalgo County Water Control & Impr. Dist.) 2, lot 1, blk 20, Alamo Land and Sugar Co. sub, Alamo gr, 4 mi s Alamo, sd 731 ft, dropped until work begins. McCollum Exploration Co.'s R. E. Harding 1, 850 ft w of old Quintana Engleman 1, in lot 11, blk 94 in Mestenas gr, Missouri-Texas Land & Irrigation Co. subd, lcn, 6800 ft test. Union Sulphur Co.'s ARGL No. 7, tr No. 2309, blk 59, 4000 ft e Mercedes field, td 7608 ft, 5-in csg 7530, recemented liner, dr out to 7588, perf & sd woo; ARGL&I Co. 8, lot 2120, blk 87, N. Capisalle disc, N. Mercedes field, td 7822 ft, 5-in cas 7822, pb to 7500 ft, pb to 7218 ft, will sdtr, set 5-in cas at 7450 ft in sdtr hole, testing on jet, showing 41 grav oil at 7470 ft; ARGL&I Co. 10, blk 50, tr 2418, N. Capisalle dist, dr 1670 ft.

JACKSON COUNTY — Steinberger Pet. Corp.'s Drushell 1, lot 6, Gale sub, Hayes Ranch, N. Rodriguez sur, edge Edna gas field, td 5132 ft, lost slips, pushed slips to side cement there, sdtr, dr 4800 ft in sdtr hole.

JIM HOGG COUNTY—Theo Hicks et al's Kohler 1, blk 9, sub Noriseitas gr, 3 mi nw Hebbronville, mim. J. H. Meek, Jr.'s Martinez 1-A, sur 623, dr 1807 ft.

JIM WELLS COUNTY—Camp Drlg. Co.'s Jane Schallert 1, 1134.83-ac tr, sh 3-A, Los Presenos de Abajo gr, 2½ mi w Bentonville field, ru & dr water well. Gist & Graddy's B. W. Owens 1, Poitevant sur, nw Bentonville field, sd 4175 ft for repairs; J. Bennett 1, lot 87, sec 76, Holdeman sub, 2 mi w Premont field, td 350 ft, set sur csg. La Jita Corp.'s Fred Erck 1, sec 15, 1 mi n of Bentonville disc, well drilling 4762 ft, hard sandy shale; Hayden et al's 1, ne¼ of sec 19, Richard King Farm lots, set 1030 ft sur csg, woc. Stanolind O&G Co.'s F. L. Blundell 2, sw¼ of sec 16, 160-ac tr, King Ranch lots, dr 3889 ft; Frame & Bowers 1, sec 14, King Ranch sub, 1 mi ne Bentonville disc, dst 5385-5394 ft, failed set csg 5405 ft, td 5425 ft, dst will seat at 5396 ft, top plug 5417 ft showed 2640 ft sw, pb to 5405 ft, tested sw, sd for orders.

KARNES COUNTY—De Graffe & Reele's Cochron 1, McConnell League, 5 mi ne Riddleville, ru and sd, dropped until work begins. Hickman et al's R. L. Barnett 1, Alex Hunter sur, sd 2150 ft.

KERR COUNTY—Auld & Evans' I. R. Henner 1, sec 13, BS&F sur, 25 mi nw Kerrville, td 2838 ft, co to btm.

KIMBLE COUNTY—Dr. B. R. Thomas' B. D. Rust 1, sw¼ sec 47, BS&F sur, 13 mi nw Junction, sp and sd for orders, dropped until work begins.

KLEBERG COUNTY—Clark et al's Kevlin 2, Fernando Creek, blk 8, sec 39, KT&I subd, sd 1425 ft. McCord & Daybault's Killam 1, lot 7, sec 53, DT&I sub, 5 mi se Recardo, lcn, dropped until work begins.

LASALLE COUNTY—Davenport & Talbot's G. Watkins, sur 103, 25 mi e Encinal, sd 2729 ft, dropped until work begins. Kennedy & Johnston's Gilmer & Wildenthal 1, 140-ac tr,

sur 283, 8 mi se Cotulla, dk blew down rebldg. Paul Meadors & Adair et al's Reed 1, sec 136, T. Conla sub, 15 mi e and 10 s of Cotulla, sd for fuel, td 3125, whipstocked out at 2592, d & a 4010 ft. W. H. Vernor's M. G. Jeffries 1, sec 726, HE&WT Ry sur, 10 mi se Artesia, dk blew down, rebldg.

LAVACA COUNTY—Cole Pet. & Rhea Nixon's Reed E. Nollkamper 1, 3 mi se Kurxl, in 65.7-ac tr, sw cor of Arch Somthers sur, d & a 2400 ft. Goode & Mayton's M. Schaffer et al 1, 481-ac lse, W. R. Hensley sur, lcn.

LIVE OAK COUNTY—Dirks Bros.' A. E. Nichols 1, S. Ryan sur, td 1285 ft, reaming to btm. Adolph Douvre's S. A. Jt. Stk. Lnd Bk 1, plat 27, Tips subd, Richard Everett sur, 2 mi nw Three Rivers, top Gov't Wells 1490 ft, sw, top Mirando 1650 ft, sw, blew out, ran wild for two days, killed after pumping 200 sacks of baroid into hole, upper Cockfield 1792-1802 ft, upper portion carried 25 mcf gas volume, shale 1802-1808 ft, cored Pettus sand saturated with oil 1802-21 ft, drilled sand 1821-32 ft, show oil, Conroe sand 1977 ft, 2002 ft, all sw, hung 5 3/16-in csg at 1865 ft, cemented with 150 sacks, perf 1808-15, show sw, recemented perf 1785-90 ft. J. J. McRoberts et al's J. D. Mahoney 1, 142-ac tr, Thomas Henry sur, 3 mi w Three Rivers, dr 1489 ft. Sun Oil Co.'s J. G. James 1, 1258.3-ac tr, Pat McGloin sur, 1 mi e Mikeska, clearing lcn.

MAVERICK COUNTY — Rio Dev. Co.'s Winchester Kelso 1, 297-ac tr in sur 2, 3 mi ne fr Eagle Pass, dr 210 ft. Thornton & Underwood's Thompson Heirs 1, Uvalde County School Land sur No. 2, 6 mi n of Eagle Pass, mir.

McMULLEN COUNTY—Comet Oil Co.'s H. L. Lark 1, blk 110, Lark subd, E. W. B. Scrugham sur, coring 790 ft. R. J. Hill et al's J. Richardson est 1, of sur 158, S. & M. sur, td 2741 ft, ds stuck. Humble O&R Co.'s D. W. Rhodes 2, sw¼, sec 17, 1½ mi ne Rhodes field, td 3039 ft, sand 2481-94 ft, test sw & some gas, pb & set 5½-in csg 1780 ft, woc. Rancho Oil Co.'s La Chusa 1, 330 ft nl & wl of se¼ of sur 52, lcn, dropped until work begins. C. C. Shumway's Shiner Ranch 9, sec 51, Shumway sub, Shiner Ranch, 9 mi s Wetz, top Jackson 814 ft, td 1624 coring ahead still in sand & still showing saturation, dst 1597-1615 ft, rec 2 joints dr mud. Ike W. Taylor's H. L. Lark 1, lot 72, Lark subd, E. W. B. Scrugham sur, between Jacob & Callihan fields, ru. Travelers Oil Co.'s Chas. T. Lark 2, 50-ac tr, E. W. B. Schrugham sur, blk 114, sd 1032 ft for cas.

MEDINA COUNTY — Frank A. Brown's Mary Winn 1, John Ward sur, sd 1100 ft, dropped until work resumes. N. C. Johnson's R. T. Taylor 2, 320-ac tr, Henry Castro sur 136, sd 165 ft in sandy sh with oil show. Thomas & Rife's Amelia Zadich 1, S. O. Lubbock sur, No. 504¼, se cor county, dr 700 ft. Chas. H. Wagener et al's Medina Irrigated Farms 10-A, 500 ft wl, 200 ft sl of blk 3, sec 8-A, Hewitt sur 39, td 287, comp 2 bpd, set 6-in shoe 274 ft, 5 3/16-in liner 19 ft, 2-in tub 283, top gray sandy sh 249-253, dry sand 253-255, gray shale 255-80, oil sand 280-87 ft.

NUECES COUNTY—Mills Bennett's J. K. Ordner 1, 120-ac tr, AB&H sur, No. 410, ab 991, ¼ mi w Saxet field, td 5918 ft, pb to 4000 ft sand, set 7-in cas 4150 ft, perf 4096½-4101½ ft, dst rec frbls sw & little oil, recement perf 4078-82, jet with gas, but failed flow, will perf higher. J. T. Cox's John Haney, share 11, Harney lands, Gregoria Farias gr, 2½ mi se Callahan, sd 2085 ft, dropped until work begins. O. W. Killam's O. S. Crook 1, ne¼ sec 115, F. Z. Bishop subd, Driscoll Ranch, 2 mi ne of Bishop, sp. Betty Ellich 2, 600 ft s No. 1 Ellich, td 3922 ft, sand 3881-3908 ft, set cas, ran electric formation test, cleaning show light o & g 1600 lbs wp, will kill & reperf. G. M. Richardson et al's P. S. Carter 1, center of nw¼ of se¼ of sec 8, Laurels Farm tr, mim for 7000 ft test. Texon Drlg Co.'s Mable Eliff 1, 3054-ac tr in A. Longria sur, 2½ mi sw of Agua Dulce field, coring 6200 ft.

REFUGIO COUNTY—Benedum & Trees' R. H. Welder 1, commence west corner Friedline pasture, thence n 53 degrees east 4443 ft to location in Juan Pabedano sur, ab 49, set 1000 ft sur cas, woc. E. W. Price et al's R. H. Wood 1, 600-ac lse in Dona Anastacia Reojas sur, ½ mi n Woodsboro & 4 mi s Refugio field, sp. Tide Water Oil Co.'s E. G. Landgrof 1, 220-ac tr, J. Collyer sur, eastern portion county, pits dug, moved in material & sd for weather.

SAN PATRICIO COUNTY—Atlantic Oil Prod. Co.'s Maryland Trust Co. 1, blk 17, B-C sub, 1150 ft sw disc well, Aransas Pass field, td 5350 ft, twisted off ds, set whipstock at 4904 ft, sdtr, wash at 4852 ft, will set w/s. Hiawatha Oil Co.'s E. H. Welder 4, 990 ft s of nl, 350 ft w of el of sec 19, Welder Ranch subd, bldg dk. Conroe Drlg. Co.'s D. M. McGloin 1, 330 ft sl & wl of sec 33, Pauls subd, of Coleman Fulton Pasture Lands, 2 mi e Odom, sp. L. A. Douglas & Empire O&R Co.'s Hulda Konze 1, sec 15, tr 2, 200-ac tr, Welder subd, Patrick Fitzsimmons sur, 3½ mi sw Sinton, ru. O. W. Killam's J. F. Green est 1, 782-ac tr, R. Roos sur, 1½ mi sw Taft field, dr 3955 ft, sh. Joe Lundin & Rowan & Hope's Mrs. E. W. Welder 1, sec 80, Welder ranch subd, 2½ mi sw St. Paul, td 5005 ft, sdtr, dr 4060 ft in sdtr hole. Plymouth Oil Co.'s E. H. Welder 2-D, sec 4, Welder ranch subd, 1 mi e Sinton field, sand 5533-41 ft, set 7⅝-in csg, pb slightly, attempting recondition. Trinity Drillers' W. C. Mayfield 1, lot 11, Roos subd, 2 mi n of White Point gas field, ru.

STARR COUNTY—Sam Adam's Garza 1, 1400 ft s of St. Hyway 4, 150 ft e of el of Military Reservation in sh 20-A, porc 80, Juris of Reynosa, sd 600 ft. J. F. Anderson's Yzaguirre 1, 139-ac tr, porc 79, dr 2500 ft. Jno. F. Anderson's Garcia 1, sh 196, in sh 199, porc 90, se of Barbocoas field, dr 650 ft. Porter Evans' H. F. Ferry 1, blk 3, Evans sub, Ferry lands, porc 86, 7 mi se Rio Grande City, sp. F. Davenport & Slick Urschel's T. B. Slick est 1, el of sec 485, sp. A. A. Kelley's N. Gonzales 1, 100-ac lse, sh 62, porc 71, sp and sd, dropped until work begins. Killam & Staggs' S. D. Ricaby 3, porc 83, Camargo Juris, 3 mi se Rio Grande City field, gas sand 963-974 ft, shale 974-977 ft, gas sand 977-93 ft, td 1448 ft, set cas on btm will gun perf. Ed Leach's Dona Est 1, porc 84, Juris of Camargo, cored gas sand 963-975 ft, tested 320 lbs pres, 15 min, show dry gas, td 1028 ft, comp 450 lb gas well through perf 963-75, 5-in cas 1028 ft. A. G. McMath's M. Guerra & Son 1, blk 25, Conroe subd, porc 55, Juris of Mier 1, dr 320 ft. Moss & Bass' Frank Doyno 2, 150 ft wl, 150 ft nl of blk 3, tr 77-A, Camargo Juris, ru.

TRAVIS COUNTY — J. Morgan Russell, Alan Milton 2, 150 ft wl, 1500 ft nl, 48-ac tr, Jennings sur, 3 mi se Manor, td 435 ft, junked & abnd, top serp 275 ft.

WEBB COUNTY—Lu-Tex Oil Co.'s Lone Star Construction Co. 9, 330 ft sel 7700 ft nel of porc 12, 12 mi nw of Laredo, td 2064, reinstated, resumed dr. Mid-Continent Petr. Corp. & Oklahoma Co. of Texas, Inc.'s E. T. Laubacher 1, 330 ft out of ne cor of nw¼ of sec 1394, sp.

WILLACY COUNTY — Ruiz & Morton's Santa Rosa, Inc. 1, 330 ft nl & el of lot 12, blk 31, Santa Rosa subd, sh 44, San Juan de Carricitos sur, dk & sd for rig. Shell Petr. Co.'s Yturria Land & Cattle No. 1, sh 65, San Juan de Carritos gr, La Sal Veja prospect, coring below 6980 ft.

WILLIAMSON COUNTY — Fritz Fuch's Jackson 1, Fred Murray 80-ac tr, H. Owen sur, dr 2280 ft, hard sh. James Holdeman et al's Amor Forwood 1, 160-ac tr, HT&B Ry sur, sec 4, sur 14, sd 965 ft, dropped until work begins.

ZAVALLA COUNTY—Bay Oil Corp.'s Nat'l Bank of Commerce 1, sec 43, blk "A," AB&M sur, 16 mi se Batesville, td 6585 ft, top Buda lime 6580 ft, pb to 6250 ft, acidized, showed some oil shoot tested in pb hole, show little oil, dr 7003 ft, top Edward lime 6860 ft, tested hard & dry. Leona Oil Corp.'s George West 1, C. Bustille sur No. 1, top chalk 5760 ft, sd 6020 ft, contract depth, dropped.

TEXAS GULF COAST

AUSTIN COUNTY—W. H. Mitchell's Fenner 1, s of Kenney, J. Fitzgibbons sur, sd 1948 ft.

BRAZORIA COUNTY—Strake Petroleum Corp.'s Poole 1, Poole Ranch prospect, W. Eggers sur, sd 7506 ft. Gulf's Fairfield 1, Lochridge prospect, Wm. Robeson sur, woc 6380 ft.

BURLESON COUNTY—M. R. Exploration Co.'s Fontaine 1, e of Caldwell, Wm. Raleigh sur, abn 2610 ft. Red Bank Oil Co.'s Gram 1, Chriesman area, E. Sante sur, dr shale 5655 ft.

CHAMBERS COUNTY—Glenn H. McCarthy's Kilgore 1, Cotton Lake area, J. Townsend sur, fsh 5082 ft.

GALVESTON COUNTY — Sun's Houston Farms Development Co. 1, Green's Lake area, D. Buckley sur, dr salt water sand 3667 ft. Shell's Maco Stewart 1, Hitchcock prospect, J. Spillman sur, taking drill stem test at 6720 ft.

HARDIN COUNTY — Republic Production Co.'s Brooks 1, Silsbee prospect, J. W. Brooks sur, coring oil sand 6981 ft. Resource Prod. Co.'s Howth 1, sw of Ariola, A. J. Cotton sur, abn 6021 ft.

HARRIS COUNTY—Bunte Oil & Gas Co.'s Graves 1, Bammel prospect, C. Walters sur, spudded by hand, now sd. Houston Oil Co.'s Lackner 1, Eureka area, H. Reinerman sur, running 7-in csg 7678 ft.

JEFFERSON COUNTY—Sun's Broussard 1, Labelle prospect, B. Blackmon sur, fsh 9843 ft; Sun's Paggi 2, Nome area, J. W. Kirby sur, ru.

MATAGORDA COUNTY—Texas Gulf Prod. & Superior's Wadsworth 1, Sheppards Mott area, S. R. Fisher sur, fsh 5972 ft. Marathon Oil Co.'s Kountz 1, Midfield prospect, I&GN sur No. 11, sd 7000 ft. Pierce Estate, Inc.'s Pierce Estate 1, ne part of county, Wm. Brown sur, coring 2602 ft. Sun Oil Co.'s Craig 1, Hawkinsville area, T. Williams sur, swabbing 18 bbls daily 5150 ft.

MONTGOMERY COUNTY—W. O. Belnoski's Wood 1, Willis area, Wm. Weir sur, washing 3720 ft. Blumenthal's Delta Land Co. 1, Willis area, J. Stokey sur, dr shale 1785 ft.

ORANGE COUNTY — Texas-Canadian Oil Co.'s Lutcher Moore 1, flank of Orange field, J. Dyson sur, lcn.

POLK COUNTY — Mayo & Dozier's D. Mayo 1, Segno prospect, J. C. Loving sur, lcn.

TRINITY COUNTY — Boone Brothers' Adams 1, nw of Trinity, G. Sosa sur, ru.

WALKER COUNTY—L. M. Gay's Stubblefield 1, w of Trinity, G. Badilla sur, dr shale 2058 ft.

WASHINGTON COUNTY — Carl Dyer's Thomas 1, n of Brenham field, N. Hensley sur, sd 2020 ft. Sun's Lauter 1, Clay Creek field, N. Clay sur, cemented csg 6754 ft.

WHARTON COUNTY — Cockburn Oil Corp.'s Fee 1, Magnet area, Smith & McKenzie sur, dr shale 165 ft. Continental's Weakley 1, Magnet area, J. Clements sur, dk. Pure's Borden 1, Blue Basin prospect, W. H. Leckie sur, dr shale 6312 ft; same operator's Shult 1, Blue Basin prospect, L. P. Ogden sur, dr shale 7171 ft.

WYOMING

ALBANY COUNTY—James Lake Oil Co. George & Hunt 1, nw ne se 5-17n-75w, dr 1726 ft. Ohio Oil Co. Elizabeth Stiles 1, swc 12-15n-75w, dr 1050 ft.

BIG HORN COUNTY—J. L. Drumheller Government 2, nw ne se 17-49n-91w, dr 1041 ft.

CAMPBELL COUNTY—C. J. Sherin et al Rodes 1, ne se sw 24-49n-74w, dr 191 ft.

CARBON COUNTY—Medicine Bow Oil Co. Hintze-Government 1, cne se 18-22n-78w, spd.

LARAMIE COUNTY—Amerada Petroleum Corporation Morton 1, csw sw 13-13n-68w, ru.

NIOBRARA COUNTY—Riggs Oil Co. A. A. Spaugh 2, nw ne 5-33n-65w, dr 210 ft. Lewis Gokel's 1, sw ne 31-34n-62w, dr 851 ft.

SUBLETTE COUNTY—Wright & Lackey's Haddenham 1, nwc se sw 21-28n-113w, dr 281 ft.

WASHAKIE COUNTY—Wyoming Oil & Refining Co.'s Frison 1, nw sw nw 14-46n-97w, dr 2350 ft.

WESTON COUNTY—Conway Oil Co. Government 1, se se nw 7-41n-60w, dr 2447 ft.

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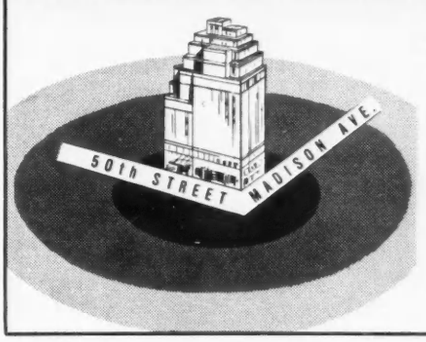

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Catalogs . . . Bulletins

Valves and Fittings

Hydraulic Press Manufacturing Company, Mt. Gilead, Ohio, has issued bulletin No. 3601, an attractive booklet describing its line of "Forgsteel" valves and fittings.

Pipe Tools

Beaver Pipe Tools, Warren, Ohio, has ready for distribution an attractive bulletin describing its Model A Special and Standard pipe machines.

Welding

The Lincoln Electric Company, Cleveland, Ohio, recently issued a bulletin, "Lower-Cost Manufacturing by Shielded Arc Welding."

Hard Metal

Diamond Metal Company, Houston, has ready for distribution an attractive folder describing the hard metal it manufactures and distributes. Various uses of the metal are described.

Controllers

The Brown Instrument Company, Philadelphia, has issued a folder that illustrates and briefly describes the features of its air operated controllers, which recently were introduced by the company.

Chain Hoists

The Yale & Towne Manufacturing Company, Philadelphia division, recently published a small catalog that describes the different kinds of chain hoists it manufactures, including the new "Yale Pul-Lift," a special hoist that was designed to meet the demand for a general purpose tool for operation in both horizontal and vertical position.

Pyrometers

Leeds & Northrup Company, Philadelphia, recently published a 52-page catalog describing its full line of pyrometers, recorders and controllers.

Toncan Iron Pipe

Republic Steel Corporation, Cleveland, Ohio, is distributing the fourth edition of "Toncan Iron Pipe for Permanence" a 64-page book profusely illustrated with test charts and tables and incorporating sections dealing with threading, air conditioning, industrial maintenance and process uses, and brewing and distilling applications.

Motor Reduction Unit

Philadelphia Gear Works, Philadelphia, has issued "Motoreducer" catalog No. MR-36, this latest edition including the description of the two new sizes, Nos. 405 and 444. The catalog will be mailed to anyone requesting it.

Speed Reducers

Foote Gear Works, Cicero, Illinois, recently issued a 90-page catalog describing its line of speed reducers. The catalog is well illustrated with drawings and shows dimensions of the various types.

Diesel Engines

Fairbanks, Morse & Company, Chicago, has ready for distribution an attractive bulletin that describes the company's line of Diesel engines for rotary drilling rigs.

Boiler

A new edition of the booklet featuring Babcock & Wilcox integral-furnace boiler is now ready for distribution.

This fully-illustrated 24-page booklet contains details of the design and construction of this modern unit, presents typical performance data, and includes photographs of six of the 58 units now installed or on order.

Copies of this publication may be obtained by writing to The Babcock & Wilcox Company, 85 Liberty Street, New York, N. Y.

HOARD EXPLORATION COMPANY
Seismograph Surveys
623 Esperson Bldg.
Houston Texas

Trucks

Safety is the theme of a 24-page illustrated booklet just published by The Four Wheel Drive Auto Company, Clintonville, Wisconsin, and Kitchener, Ontario, Canada.

In vivid color and graphic detail a story of automotive safety is brought to the reader. Statistics regarding 1935 highway accidents and causes of such are shown in a clear and forceful manner.

Safety advantages of FWD (four-wheel-drive) trucks for all types of hauling are brought out with highlights given to FWD Controlled Power as the major factor.

Compressors

Sullivan Machinery Company, Michigan City, Indiana, has issued a new bulletin on its line of Unitair Compressors.

The Unitair is a two stage, completely air cooled, V-type, single acting stationary compressor incorporating many advanced features in compressor design.

The ability to install in a short time, ability to operate on little foundation, designed for 24-hour service and other features such as Micro-lift valves, all-at-once inspection, trouble free ball bearing main bearings make this line the outstanding compressor development of the year.

Available in four sizes to 400 C.F.M. displacement and for any kind of drive; built-in electric motor; direct connection or V-belt drive from motors and gasoline, distillate or diesel power units.

Spiral Welded Pipe

The American Rolling Mill Company, Middletown, Ohio, recently issued a comprehensive 40-page booklet describing the uses of its spiral welded pipe in the oil and gas industry. It is well illustrated, and shows charts and data tables of interest. It will be mailed to interested persons upon request.

Pumping Equipment

Jon R. Long, Fort Worth, Texas, has ready for distribution catalog No. 6, describing the pumping and gas lift production equipment he manufactures and distributes.

Perforation Washer

The Cavins Company, Long Beach, California, has ready for distribution a new, comprehensive four page bulletin describing in detail the operation and mechanical features of the Cavins Perforation Washer. Detailed charts and drawings illustrate its assembly and uses, and show how it works.

Vibrating Mud Screen

Allis-Chalmers Manufacturing Company, Milwaukee, recently issued leaflet No. 2198-A, describing its "Shale Shaker," a vibrating screen designed to reclaim and condition drilling mud.

Tire Handbook

Containing even more statistical information than previous annual volumes, the 1936 edition of the "Operators' Handbook" has just been published by The B. F. Goodrich Company, Akron, Ohio. Into the 66 pages of the handbook has been packed detailed data on tires and tire performances of interest to owners and operators of trucks, busses, and tractors. Listing every ordinary type tire and tube which the company manufactures for truck, bus or tractor service, the volume lists the specifications on each, including the size, number of plies, rim, section width, tire diameter, carrying capacity, loaded radius and air pressure, and describes the service for which each type tire is suited.

One page is devoted to a discussion of "Why Tires Fail" two pages to a description of the new Tire Calculator designed to reveal exact truck tire costs, and the methods of its operation and 48 pages to specifications on tire and tube lines.

"Factors Governing Proper Tire Selection" are discussed in two pages, one of which is a load and service diagram, illustrating the effects of overloading on the ultimate service of a pneumatic tire. The easiest way to determine tire loads is related in two pages, while another two pages are devoted to a load and inflation table, giving correct inflation on each size tire and the carrying capacity in pounds.

Three pages are given over to a discussion of the correct methods to determine tire cost per mile, and its importance in economical operation of vehicles.

One of the most interesting sections of the booklet is the five pages devoted to a table of weights and measures, listing practically all commodities.

Copies are available upon request to The B. F. Goodrich Company, Akron, Ohio, or to its dealers.

NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Catalogs • Books

SOLDER
Alumaweld Company of America

Alumaweld Company of America, Chicago, has announced a new flux with which the manufacturer claims it is now possible to make high strength permanent repairs on joints of any metal. It is applied with an ordinary soldering iron or blow torch. The soldering job is done at a low temperature but has the advantage of requiring high temperatures to melt it a second time. It works equally well on aluminum, stainless steel, die cast pot metal, cast iron, copper, brass, etc., which makes it easy to join any two different metals if desired, it is claimed.

Alumaweld Flux works equally well with any type of solder, however, when greater tensile strength is desired, the use of Alumaweld Solder is recommended.

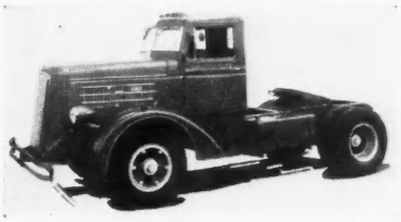
Alumaweld Solder has a tensile strength of 12,000 pounds which is ten times that of ordinary solder. The finished joint can be worked or machined and takes a polish over which chromium or any other plating can be applied.

TRACTOR TRUCK
Four Wheel Drive Auto Company

Four Wheel Drive Auto Company, Clintonville, Wisconsin, and Kitchener, Ontario, has announced a new 40,000-pound gross capacity tractor truck, designed to meet the requirements for a compact high speed unit for heavy duty hauling. This unit meets the increasing trend in highway regulation which restricts the length and axle weight of tractor and trailer units, the manufacturer claims. This ability to better comply with the highway regulations is said to be due to the more equal weight distribution made possible by setting the front axle back 53 inches from the front bumper. The weight distribution of the tractor is 40 percent on front axle and 60 percent rear. The manufacturer states that the new tractor truck with semi-trailer is designed to carry a gross of 40,000 pounds distributed 10,000 pounds on the front axle of the tractor, 15,000 pounds on the rear axle of the tractor and 15,000 pounds on the axle of the semi.

The T-40, the newest addition to the FWD line, combines utility with beauty and safety. Although the truck is designed and constructed particularly for speedy heavy duty service, beauty is emphasized through the eye-pleasing lines of the skirted teardrop fenders, radiator grille, vee'd windshield and streamline hood and cab. According to the manufacturer, controlled power, provided by the better distribution of power and load through the use of a center differential and setback front axle, is the key to the truck's capacity for high speed hauling.

The tractor can maintain a road speed of 52 miles per hour on the level



FWD Truck

and due to its four wheel traction is able to negotiate steep hills. The short overall length and standard wheelbase of 130 inches provides short turning radius and ease of maneuverability.

The 125 horsepower motor has displacement of 462 cubic inches, and develops 324 pounds of foot torque. The transmission is of the 5 speed sliding gear type with overdrive and reduction of 7.3 to 1 in direct. These features mean increased acceleration and economy. Other features of the power line are: 14 inch single plate clutch, transfer case with 5-inch silent chain, center differential and propeller shafts with needle bearing type universal joints. Through this line the power is transferred to the front and rear axles which are of the full floating type. The unit is equipped with overload springs front and rear. Tires are 9.75-20, singles front, duals rear. Frame height is 36 inches.

FLUID LEVEL DEVICE
Depthograph Company

Depthograph Company, Alhambra, California, has announced a new method of determining fluid levels in pumping oil wells without the necessity of shutting down the pump or in any way disturbing the normal operation of the well.

In this new method of locating fluid levels, a pressure wave is created in the annular space between the tubing and the casing by quickly releasing compressed gas into this space at the top of the well. The fluid level is determined from the time required for the wave to travel to the fluid surface and back to the top of the well. The release of gas and the return of the wave to the top of the well are recorded photographically on a strip of sensitized paper. Time marks at 0.1 second intervals are simultaneously recorded along one edge of this strip chart, making it a simple matter to quickly and accurately determine the time intervals between the starting of the pressure wave and the return of the wave echoes to the recorder.

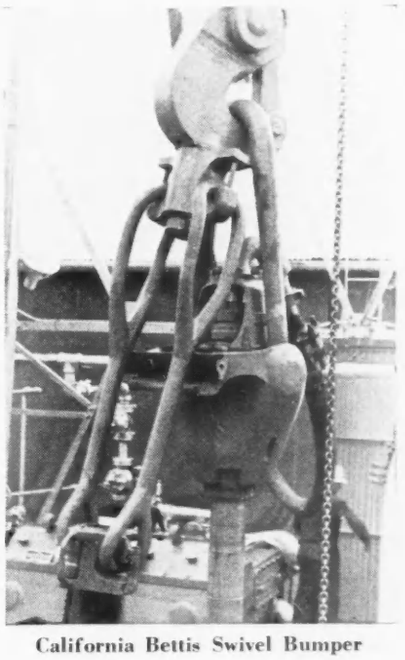
A wave is reflected from the tubing catcher or reflector as well as from the fluid surface. Knowing the time required for these waves to return to the top of the well and the distance to the catcher or reflector, it is a simple operation to compute the distance to the fluid.

The rate at which the pressure wave travels in individual wells may vary over a wide range and depends largely upon the gravity of the gas in each well. The velocity is faster in light gas than in heavy gas. Because of this difference in velocity in different wells, it is either necessary to have a tubing catcher or some form of wave reflector in the well from which the pressure wave velocity can be determined, or to actually measure the velocity of the wave in the gas as it flows through suitable calibrating apparatus located on the derrick floor.

Determining the velocity by means of catchers or reflectors at a known location in the well is more accurate, and the cost of running the fluid level test is less than if the wave velocity is measured at the surface in the calibrating apparatus.

SWIVEL BUMPER
California Bettis Company

California Bettis Company, Los Angeles, has developed a new swivel bumper that was designed to prevent wear on bails where they contact the swivel, and to reduce the metallic contact which



California Bettis Swivel Bumper

causes such a clattering noise in the derrick. The bumper has a resilient rubber cushion, the rubber for which is manufactured by Patterson-Ballagh Corporation for its protector rubber stock. The device has been adopted as standard by two leading swivel manufacturers, according to the manufacturers.

Regulator

Grove Regulator Company, San Francisco, recently issued a well illustrated bulletin, containing interesting installation photographs and sectionalized views of the Grove Universal Regulator. The new bulletin may be procured by writing the company, 1072 Bryant Street, San Francisco, California.

This Week with the Industry's EQUIPMENT SUPPLIERS

Dillman With Pittsburgh Equitable at Tulsa

Pittsburgh Equitable Meter Company, Pittsburgh, has announced the appointment of F. N. Dillman as sales engineer. After graduation from Kansas State University in 1924, Dillman joined the Kansas

F. N. DILLMAN

State Highway Department as a civil engineer. Since then he has been engaged in various types of sales work. For the two years prior to joining the meter company, he was with Continental Oil Company in the sales division. He will work out of the Tulsa office and will be in charge of Emco-McGaughy integrator sales and service under the supervision of J. L. Cottrell.

Shaffer Becomes Coast Manager for Kennedy Valve

The Kennedy Valve Manufacturing Company of Elmira, New York, has appointed Leonard E. Shaffer as Pacific Coast manager. Shaffer will be in charge of the Kennedy San Francisco branch at 448-450 Tenth Street, San Francisco, California, where a warehouse is maintained for stocks of Kennedy valves, pipe fittings, and fire hydrants. He will also continue to maintain his Los Angeles office at 1340 East Sixth Street, Los Angeles, California, where he has been the Kennedy Southern California representative for many years.

U. S. Steel Exhibit At Michigan Show

Representing seven principal subsidiary companies, an informative exhibit of genuine interest and significance to oil men will be presented by United States Steel Corporation at the Michigan Oil and Gas Exposition, Mt. Pleasant, Michigan, August 11-16, 1936.

Principal display space will be devoted to an exposition of American Steel and Wire Company's products as applied to oil field use, including wire rope and cable exhibits, electrical wires, and other wire product displays.

Also on exhibit will be alloy steels as applied to drilling equipment and galvanized steel for economical roofing and siding of oil field structures, both products of Carnegie-Illinois Steel Corporation. United States Steel's display spaces are Nos. 24 and 25, Science Hall, on the exposition grounds.

A. I. M. E. Book For 1936 Published

The American Institute of Mining and Metallurgical Engineers, 29 West 39th Street, New York, has published its 1936 issue of A. I. M. E. Transactions, Petroleum Development and Technology. The price is $5 net; bound in cloth. The book contains 536 pages, and is the eleventh of the Petroleum Development and Technology Series of the petroleum division of the American Institute of Mining and Metallurgical Engineers. It contains papers presented before the Division at Houston in October, 1935, and at New York in February, 1936.

There are five chapters. The chapters are devoted to: (1) Estimation of Petroleum Reserves; (2) Production Engineering; (3) Petroleum Economics; (4) Production; and (5) Refining. There are 139 pages of material in the chapter on production engineering, 20 in the one on petroleum economics, 229 pages on domestic production development, and 76 on foreign production.

Gillespie Given Wider Territory for Flexible

Flexible Steel Lacing Company has announced appointment of James W. Gillespie as representative in the southwestern states. Gillespie will maintain headquarters in Dallas, and will cover the states of Texas, Louisiana, Arkansas and Oklahoma. He formerly was with U. S. Rubber Company, General Tire & Rubber Company, B. F. Goodrich and Buffalo Weaving & Belting Company, and since April 1 has been calling on the trade for Flexible Steel Lacing Company in Oklahoma.

JAMES W. GILLESPIE

Wienecke Joins Gaso Pump As Sales Engineer

Gaso Pump & Burner Manufacturing Company has announced the addition of H. A. Wienecke to its Tulsa staff as sales engineer.

Wienecke was born in St. Louis in 1901, but his family moved to Tulsa in 1914. He attended high school in Tulsa, then became a draftsman for Prairie Pipe Line Company.

H. A. WIENECKE

In 1921 he obtained leave of absence to attend Washington University at St. Louis, but continued with Prairie Pipe Line Company in his summer vacations, and in 1925 he received the degree of Mechanical Engineer from Washington University.

After graudation he continued with Prairie, first as clerk to R. G. Lewis, master mechanic, then as assistant master mechanic engaged in field work, and from 1932 to 1935 as engineer and buyer in the purchasing department. A year ago he resigned to go with Continental Supply Company, at Oklahoma City, as a machinery salesman.

A. J. Swisler Joins Hyatt Roller Bearing

Hyatt Roller Bearing Company reports that A. J. Swisler has joined its western Sales Division in the capacity of sales engineer.

Swisler will be assigned to duties in the Texas and Mid-Continent district with headquarters at Dallas.

He comes to Hyatt with many years of experience as a designer of oil field machinery. From his former association Swisler has a wide acquaintanceship in the district he will cover.

Lincoln Appoints Salt Lake City Distributor

Lincoln Electric Company, Cleveland, Ohio, announces appointment of Industrial Supply Company as distributor at Salt Lake City, Utah. This company will maintain a complete supply of Lincoln products.

Squeaks from the Bull Wheel

Keeping Up

I wonder why it is we can't save anything.

It isn't our fault, honey. It's the neighbors. They're always getting something new we can't afford.

Baby Tonic

A young bride walked into a drug store and approached a clerk timidly.

"That baby tonic you advertise—" she began, "does it really make babies bigger and stronger?"

"We sell lots of it," replied the druggist, "and we've never had a complaint."

"Well, I'll take a bottle," said the bride after a moment, and went out.

In five minutes she was back. She got the druggist into a corner and whispered into his ear:

"I forgot to ask about this baby tonic," she said under her breath. "Who takes it—me or my husband?"

Clean Sweep

The Sunday drivers had picked the farmer's fruit and his flowers, and their car was full of plunder. Pointing to an unexplored highway they inquired of the farmer:

"Shall we take this road back to the city?"

"You might as well," replied the farmer, "you've got almost everything else!"

Silent Sufferers

"Why do you feed every tramp that comes along? They won't do a lick of work for you."

"I know they won't. But it certainly is a relief to watch a man eat a meal and not find fault with the cooking."

Bless the Ladies

"I've been thinking it over, dear, and I've decided to agree with you."

"It won't do any good. I've changed my mind."

Stiff

"It says beat the whites of the eggs till stiff. I think they must be done now."

"Why, are they stiff?"

"No, but I am."

And Not Borrow

Note to advertising managers of cigarette companies: You've induced a number of girls to smoke cigarettes; now see if you can't persuade them to buy some.

Sad

Why are you crying?
Father called mother a waddling goose.
Well?
Mother called father a stupid ass.
But why are you crying?
Well, what does that make me?

He Never Used It

"Dad," said his extravagant son, "do you think they will ever find a substitute for gasoline?"

"They have one now, son, and I wish you'd give it a trial."

"Oh!" queried the son incredulously, "I've never heard of it. What is it, anyway?"

"Shoe leather."

Why He Swore

"Gee, Jimmy, when I went by your house this morning I heard somebody swearin' somethin' awful!"

"Aw, that was my dad. He was late for church and couldn't find his hymn book."

Shopping

"That lady who has just gone out says you showed her no courtesy or politeness whatever."

"Then they're about the only things in the store I didn't show her!"

Feminine Ruse

"Why did you keep applauding that soprano? Her voice was terrible."

"I know it was, but her gown was so beautiful I wanted to get another look at it."

Or Looking

"Pardon, miss, but swimmin' is not allowed in this lake."

"Why didn't you tell me before I undressed?"

"Well, there ain't no law agin' undressin'."

Just as Dangerous

"Oh, mother, here's a little green snake."

"Well, stay right away from it. It may be just as dangerous as a ripe one."

Up and Down

An old German was being cross-examined on the witness stand as to the position of a door, window, etc., and the general interior arrangement of a house.

"And now, sir," said the lawyer, "describe to the jury just how the stairs run in that house."

The man looked dazed and scracthed his head for a minute before attempting to reply "You wan' to know how der stairs run?" he repeated.

"Yes, if you please, how the stairs run."

"Vell," ventured the witness slowly, "ven I am oopstairs dey run down, and ven I am downstairs dey run oop."

Entering Business

Place: The employment desk of one of Milwaukee's "five and tens". A girl, seated at the desk, filing applications.

Enter: A June graduate, green and timid, with diploma under arm. She bolsters her courage and approaches the desk.

"I beg your pardon—that is—may I speak to Mr. Woolworth, please?"

Not Late

"Well, good-night. I hope I haven't kept you up too late."

"Not at all. We should have been getting up soon in any case."

Wrong Count

James, have you whispered while I was out of the room?

Only wunst, ma'am.

Helen, should James say "wunst"?

No, ma'am, he should say "twicet."

Just off the press . . .

ACIDIZING HAND BOOK

By **BENSON M. KINGSTON**

A timely, thoroughly practical book on a most important subject

Acidizing Hand Book takes up the purpose of acidizing, gives full information on formations which are treatable, tells how to determine treatability of formations, how to prepare a well for acidizing, and contains a section of tables extremely valuable to an operator planning to acidize a well.

The book is divided into 14 chapters which include:

CHEMISTRY AND GEOLOGY OF TREATMENT,
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THE REACTION OF SALT WATER TO TREATMENT,
PRODUCING THE WELL AFTER TREATMENT,
ACIDIZING GAS WELLS,
RE-TREATMENT AND MULTIPLE STAGE TREATMENT,
OTHER USES OF MURIATIC ACID IN THE FIELD, AND
COMPUTATIONS IN ACIDIZING.

The author has had many years of experience in practical work acidizing wells.

The Acidizing Hand Book has a Fabrikoid binding, size 5½ inches x 8 inches, and contains 78 pages.

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Fort Worth Laboratories	86
Four Wheel Drive Auto Co.	—
The Fox Rig & Lumber Co.	—
Frick-Reid Supply Corp.	—
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Gardner-Denver Co.	—
The Garlock Packing Co.	—
Garrott Brass & Machine Co.	—
Gas Power, Inc.	—
Gaso Pump & Burner Manufacturing Co.	—
Gearench Manufacturing Co.	—
General Electric Co.	—
Geophysical Service, Inc.	—
L. H. Gilmer Co.	—
Globe Oil Tools Co.	—
Goodall Rubber Co. of Texas	—
B. F. Goodrich Rubber Co.	—
Goodyear Tire & Rubber Co.	—
H. P. Gott Manufacturing Co.	—
Grant Oil Tool Co.	—
Gray-Kerotest	—
Gray Tool Co.	—
Green Head Bit & Supply Co.	—
Greene, Tweed & Co.	—
Grove Regulator Company	—
The Guiberson Corp.	—
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Gustin-Bacon Manufacturing Co.	—
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Halliburton Oil Well Cementing Co.	—
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Hewitt Rubber Corp.	—
Hinderliter Tool Co.	—
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Houston Compress Company	—
Houston Lighting & Power Co.	—
Houston Ready-Cut House Co.	—
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Humble Oil & Refining Co.	—
Hyatt Roller Bearing Co.	—
Hydril Co.	—
I	
Independent Exploration Co.	—
Independent Pipe & Supply Co.	—
Ingersoll-Rand Co.	—
International Cement Corp.	—
International Derrick & Equipment Co.	—
International Geophysics, Inc.	—
International Harvester Co.	—
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Lucey Boiler & Manufacturing Corp.	—
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The Pierce Governor Co.	—
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Pittsburgh Steel Co.	—
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Walter Ruska & Co.	—
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Titusville Iron Works Co.	—
Tnemec Co.	—
Edgar Tobin Aerial Surveys	—
Tretolite Co.	—
Trimont Manufacturing Co.	—
Trinity Portland Cement Co.	—
Twin Disc Clutch Co.	—
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The Wheland Co.	—
Wickwire-Spencer Steel Co.	—
J. H. Williams & Co.	—
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Williamsport Wire Rope Co.	35
Wilson-Snyder Manufacturing Co.	—
Wilson Manufacturing Co.	—
Wilson Supply Co.	—
Worthington Pump & Machinery Corp.	—
Y	
Yale & Towne Manufacturing Co.	—
Youngstown Sheet & Tube Co.	—

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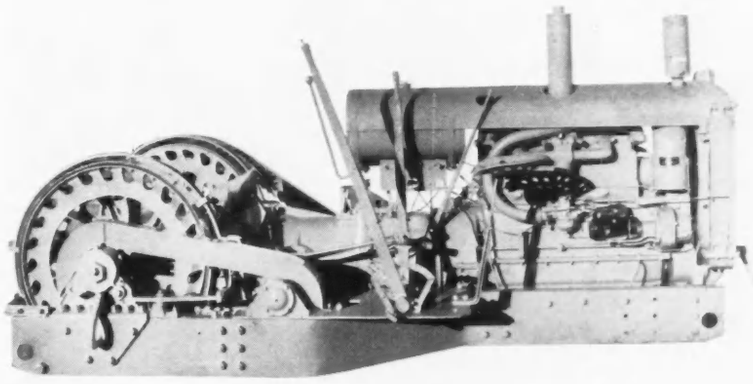

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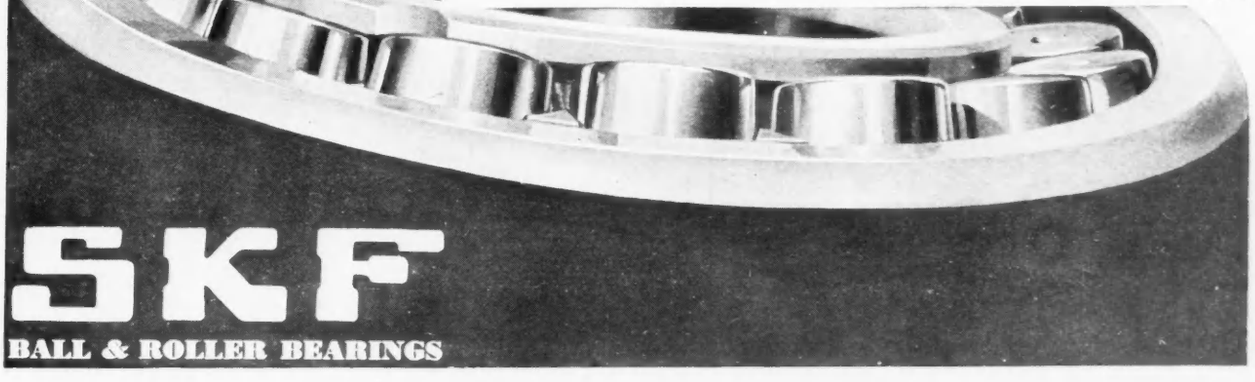

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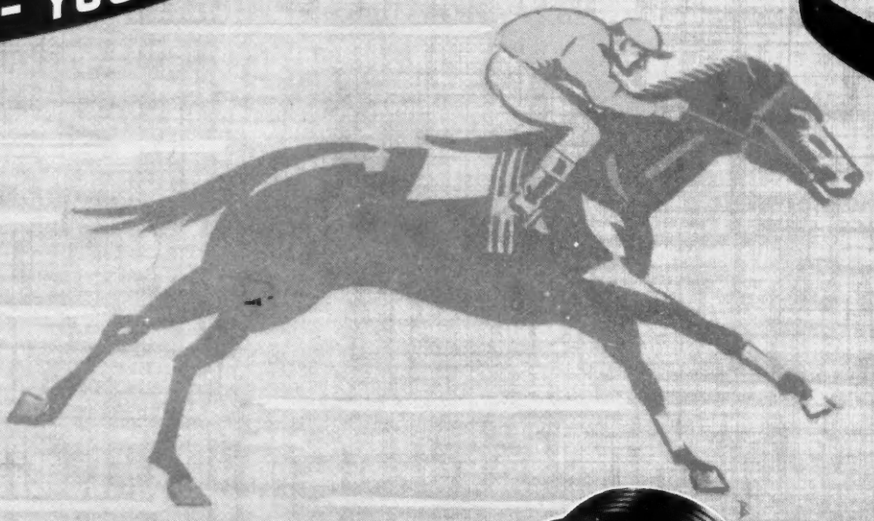

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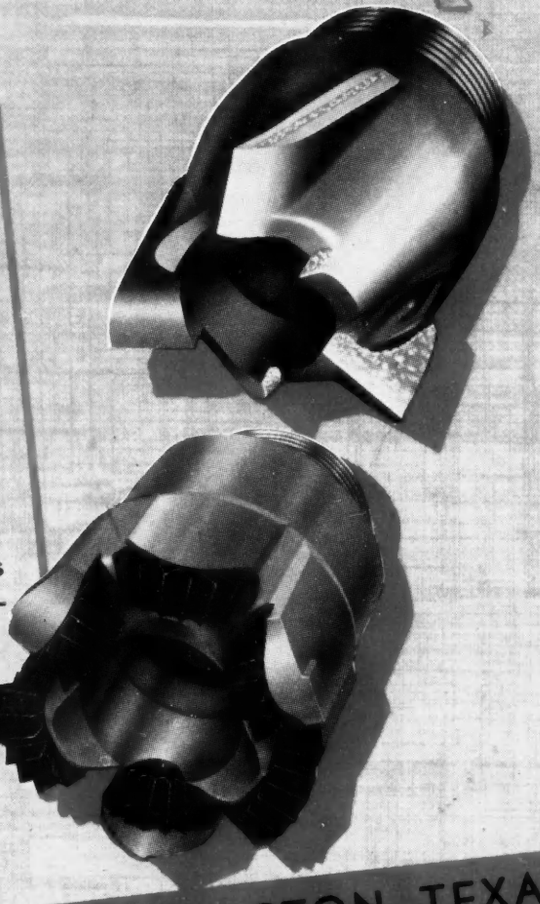

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